The Status of Telecommunications In Tennessee

1999 - 2000

Prepared by: The Tennessee Regulatory Authority

TENNESSEE REGULATORY AUTHORITY

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May 30, 2001

The Honorable Don Sundquist
Governor, State of Tennessee

The Honorable John S. Wilder
Lieutenant Governor

The Honorable Jimmy Naifeh
Speaker of the House of the House of Representatives

Honorable Members of the 102nd Tennessee General Assembly

We are pleased to submit our 2001 Report on the Status of Telecommunications in Tennessee as required by Tennessee Code Annotated § 65–5–211.

This is the Tennessee Regulatory Authority's third report on the status of telecommunications in Tennessee. This report focuses on local telephone competition in the state, current and upcoming telecommunications technologies and competitive alternatives available to Tennesseans. Detailed statistics are included pertaining to Tennessee's local exchange carriers, including the competitive local exchange carriers and incumbent local exchange companies. Additional information is provided on the financial assistance available to low-income consumers and the quality of service provided by telephone carriers. A copy of this report can be found on our web site at www.state.tn.us/tra.

Since we issued our previous report in March 1999, the TRA has continued to make significant progress in managing the transition to a competitive local telecommunications market. Numerous new providers have entered the market, and the competitive choices for business customers in the metropolitan areas of the State are increasing. Recent economic developments, however, has caused concern that some of the new market entrants will have difficulties remaining in the local telephone market.

We look forward to continuing our work with you on telecommunications matters, as well as all public utility issues. If you need additional information on any issues addressed in this report, please let us know.

Sincerely,

Sara Kyle
Chairman

Lynn Greer
Director

Melvin Malone
Director

Report to the Tennessee General Assembly

PREPARED BY:
THE TENNESSEE REGULATORY AUTHORITY
MAY 2001

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THE STATUS OF TELECOMMUNICATIONS IN TENNESSEE
1999-2000

EXECUTIVE SUMMARY

The Tennessee Regulatory Authority ("TRA") is responsible for regulating public utilities in Tennessee. Such regulation includes economic regulation, service quality regulation, as well as consumer assistance. Under Tennessee law, all investor-owned gas, electric, water and telecommunications companies are classified as public utilities. Accordingly, the ("TRA") is responsible for regulation of six (6) natural gas utilities, twelve (12) water and sewerage companies, one (1) electric provider and more than 500 local and long distance telecommunications providers operating in the state.

This is the TRA's third report to the Tennessee General Assembly on telecommunications in Tennessee. This report focuses on the status of local telephone competition in the state, current and upcoming telecommunications technologies and competitive alternatives available to Tennesseans. Detailed statistics are included pertaining to Tennessee's local exchange carriers, including the competitive local exchange carriers ("CLECs") and incumbent local exchange companies ("ILECs"). Additional information is provided on the financial assistance available to low-income consumers and the quality of service provided by telephone carriers.

In 1995, the Tennessee General Assembly revised the laws for regulating telecommunications in Tennessee. One year later Congress re-wrote the federal telecommunications laws in the first major rewrite of federal telecommunications laws since 1934. The state telecommunications act introduces local telephone competition in areas served by incumbents with more than 100,000 access lines, allows for alternative forms of rate regulation for incumbent telephone companies, and calls for the creation of a universal service fund if such is needed to maintain affordable rates for basic telephone services. The federal telecommunications act contains similar objectives to the state act but is more detailed in how to achieve those goals. For example, the federal act contains specific requirements for interconnection of the networks of different providers, and requirements pertaining to collocation, unbundled access, dialing parity, number portability, access to rights of way and resale. The new laws, however, only establish the basic framework for achieving these new goals. It

is the responsibility of state and federal regulators, like the TRA, to adopt rules and policies to implement this framework. The TRA works closely with state lawmakers, federal regulators, and regulators in other states. The TRA is also active in the National Association of Regulatory Utility Commissioners (NARUC), a trade association of the nation's utility regulators.

The Status of Competition

Since we issued our previous report on telecommunications competition in March 1999, the TRA has continued to make significant progress in managing the transition to competitive local telecommunications markets. Numerous new providers have entered the market, and the market share held by competitive providers has increased. Recent developments, however, have shown that some of the new providers are having difficulties remaining in the local exchange market.

The State's nineteen (19) incumbent telephone companies provide service to 92% of the 3.7 million telephone lines in Tennessee.[1] BellSouth, an incumbent provider, serves approximately 73% total lines in the State, Sprint/United serves 7% of the lines, all in northeast Tennessee. The remaining seventeen (17) incumbent companies and telephone cooperatives serve 12% of the lines, with CLECs and resellers serving the remaining 8% of the State's telephone lines.

The TRA has certificated ninety (90) companies to build telecommunications facilities in the Sate. Thirty (30) of these companies are currently providing services, while many of the others are still constructing their Tennessee networks. These thirty competitors serve 225,000 lines in Tennessee. This represents 6% of the total lines in the state, which is consistent with the national average for CLEC penetration. Since 1995, CLECs have invested a half a billion dollars in telecommunications facilities in Tennessee.

The federal act requires the Bell Operating Companies to "unbundle" their networks so that new providers can purchase network elements from the incumbent providers. Many CLECs are constructing their networks entirely by purchasing unbundled network elements from the incumbent providers or by combining the network elements with their own facilities. For example, CLECs may purchase their own switching equipment but rent loop facilities, the wires running from the switching

[1] The nineteen incumbent telephone companies in Tennessee include ten investor owned telephone companies and nine telephone cooperatives. Telephone cooperatives are not regulated by the TRA.

equipment to the consumer, from the incumbent local provider. This "combination" approach has proven to be the most popular approach for new competitors in the local telephone market. The federal act also allows a competitor to collocate its equipment in the same building as the incumbent provider. As of December 31, 2000, 35% of BellSouth's central offices had two or more competitors collocated. The majority of these central offices are located in urban areas.

XO (formerly Nextlink), U.S. LEC, and Adelphia (formerly Hyperion) are the most active CLECs in Tennessee. Numerous other providers, however, are increasing their activity in the state, including the nation's two largest long distance providers, AT&T and WorldCom, as well as Time Warner, a national cable provider. CommSouth and Express Connection are the most active local resellers in the state.

Electric municipalities are also becoming active in telecommunications. Chattanooga Electric Power Board is the first electric municipality in Tennessee to offer local telephone service, although Memphis Networx, a joint venture involving Memphis Light Gas and Water, has an application pending. The role that electric companies will play in the evolution of local competition is unclear at this time, but their embedded facilities and customer base suggest that electric companies will have a definite impact on the emergence of local telecommunications competition.

Tennessee is seeing most of the competitive activity in the business segments of the local telecommunications markets. Virtually all of the CLEC lines in Tennessee are business lines located in the metropolitan areas of the state. Business customers in metropolitan areas are the lowest cost customers to serve because they typically are in densely populated locations close to the telephone company's switching facilities (the central office). Competition in rural areas and in the residential market, however, is nonexistent. Ben Lomand Communications, the CLEC owned by Ben Lomand Telephone Cooperative, is the only CLEC currently providing facilities-based residential local service in the State.

The development of local telephone competition has been slower than many lawmakers had anticipated. One of the biggest reasons is the enormous investment required to construct a telephone network. Local telephone service requires more facilities and more capital than long distance telephone service. While CLECs have made great strides over the years, the substantial capital dollars required to build telephone networks is beginning to have a detrimental impact on some of

the new competitors as capital dollars become scarce. A number of national CLECs have declared bankruptcy, or are realizing major financial problems. Other CLECs have seen a significant decline in their stock prices and their ability to attract the new capital needed to maintain operations has been depressed. In the nine months after its March 2000 peak, the NASDAQ Telecommunications Index, which includes numerous CLECs, fell 57 percent. In addition to the CLEC difficulties, AT&T, Sprint, and Worldcom announced major company reorganizations with decreased focus on serving residential long distance customers, and a number of other key competitors that were expected to challenge BellSouth for market share appear to be significantly cutting back their operations.

The Impact of Technology on Competition

Technology is rapidly reshaping the competitive landscape of telecommunications. New technologies such as digital subscriber lines, cable modems, wireless and satellite services, and voice over Internet Protocol likely will create new avenues and providers for customers to receive traditional local and long distance voice services. The primary focus of these technologies is faster transmission of data. The telephone has taken a back seat to the computer when it comes to telecommunications. Data traffic is doubling every 100 days, and the industry is struggling to keep up with the demand.

The Internet is responsible for most of the new telecommunications technologies we are seeing today. The search for ways to transfer large quantities of data at break-neck speed has lead to the proliferation of broadband services such as digital subscribe lines (DSL) and cable modem services. Broadband services transmit data up to 50 times than standard dial up modems. The Bell Operating companies are the largest DSL providers in the country. However, most competitive carriers are actively marketing DSL. BellSouth recently announced that they have signed up more than 200,000 subscribers in its nine state region to its DSL service exceeding its expectations.[2] At the end of 2000, however, BellSouth was capable of providing DSL to 700,000 Tennessee households.

A significant concern among regulators with regard to broadband services is the potential for monopoly pricing of these services and the impact of such action on the affordability of broadband

[2] Despite two requests from the TRA to provide the number of BellSouth's DSL customers in Tennessee, Bellsouth refuses to provide this information to the TRA for use in this report.

services. The apparent excess supply of broadband services as demonstrated by comparing BellSouth's DSL penetration and DSL availability figures suggests that competitive forces could reduce broadband prices. Until recently this appeared to be happening. Competition among numerous broadband providers placed downward pressure on broadband rates resulting in a series of price reductions over the last year. Recently, however, the pricing of DSL broadband services is starting to exhibit monopolistic tendencies. A reduction in the number of broadband providers due to the financial struggles of CLECs and other Internet Service Providers (ISPs) have afforded the Bell Operating Companies and other large ISPs the opportunity to increase the prices of their broadband offerings. In May 2001, BellSouth, Verizon, and SBC (all Bell Operating Companies) as well as AT&T increased the rates for high speed Internet access by five to ten dollars per month which represent 10 to 25 percent increases. Similarly, AOL recently raised the monthly price of its Internet service (nonbroadband) by nearly two dollars; however, Microsoft announced it would not raise its monthly rate at this time.

The potential availability of DSL and other advanced services was enhanced dramatically in November 1999 when the FCC ordered incumbent telephone providers to share its lines with CLECs and other Internet Service Providers. Line sharing permits consumers to obtain high speed Internet access from either the incumbent or competitive carriers, without having to forego voice service from their provider of choice. Since line sharing allows customers to receive both voice and data services on the same line, it eliminates the need for consumers to procure a second line. This allows for more efficient use of the existing telephone network. For example, a consumer could use BellSouth for its voice telecommunications and AT&T for its high speed Internet access service all over a single telephone line. Subsequent to the FCC's order requiring line sharing, in December 2000, the TRA established cost-based rates and regulations for the provision of line sharing by incumbent providers.

Incumbent providers were already using line sharing technology to offer basic telephone service and DSL services over the same line prior to the FCC's decision. Thus, the actions by the TRA and the FCC actions placed competitive carriers on a more equal footing with the incumbents while not affecting the incumbent ability to offer service. Line sharing between incumbents and CLECs is developing in Tennessee, but slowly. For example, as of May 2001, BellSouth was sharing less than 300 of its lines with CLECs.

Providers of mobile wireless telephone services appear to be positioning themselves to compete with the State's landline providers. According to the FCC, nearly one in every three Tennesseans subscribes to wireless telephone service; exactly the national average. It is estimated that the price of mobile telephone service declined by 11% between the end of January 1999 and the end of January 2000 and by twenty (20) percent between 1998 and 1999. BellSouth presently has interconnection agreements with nine (9) wireless providers in Tennessee including national providers Powertel, Sprint PCS, Verizon and Nextel.

It appears that the largest landline providers, the Bell Operating Companies, recognize the importance of wireless service in the telecommunications marketplace. In October 2000, BellSouth combined substantially all of its domestic wireless operations with those of SBC Communications, another Bell Operating company, to form Cingular Wireless. The new company is now the second largest wireless carrier in the United States.

Although cable television companies have not entered the local telecommunications markets as they indicated they would in 1995, cable companies are now offering broadband, Internet access through the cable television network using cable modems. Cable companies can now bundle cable television and Internet access together in a package that is very attractive to some users. Some of the larger traditional long distance carriers are investing heavily in cable telecommunications to protect their market shares. No cable companies, however, currently have interconnection agreements in Tennessee to offer traditional voice telecommunications services.

Impact of Regulation on Competition

With the new laws and the introduction of local telephone competition, the role of regulators has changed dramatically. Previously, the primary responsibility of telecommunications regulators was to set prices based on accounting data and financial forecasts. Now, the focus is on developing a competitive marketplace while maintaining affordable prices. Regulators now serve as referees, arbitrators and mediators to resolve disputes between competitive carriers. Virtually every decision made by the TRA must consider state laws, federal laws, prior court decisions and the public interest.

It is the mission of the TRA "to facilitate the development of fair competition in Tennessee by balancing the interests of consumers and telecommunications providers." Consistent with this

mission, the TRA has made countless decisions promoting telecommunications competition in Tennessee. In addition to certificating ninety (90) facilities-based providers the TRA has:

- Established cost-based rates for the individual elements of BellSouth's network. Required that BellSouth provide element combinations.
- Established rates that allow CLECs to share the telephone line with BellSouth for the provision of broadband data services and voice services over the same line.
- Authorized a BellSouth affiliate to enter the markets of other non-rural providers.
- Required the payment of reciprocal compensation on calls to Internet service providers.
- Adopted regulations that allow consumers to change local service providers without changing their telephone numbers.
- Established performance standards applicable to the offering of wholesale services to CLECs by BellSouth.
- Established discounts on the wholesale services for two of the largest incumbent providers, BellSouth and Sprint/United.
- Established regulations for dialing parity to allow consumers to complete calls without dialing extra digits regardless of their provider.
- Implemented number portability to allow customers to change providers without changing their numbers.

In addition, the Authority is in the process of creating a portable universal service fund that will provide support to customers in high cost areas regardless of their choice of providers.

Many of the decisions by the TRA and the FCC have been appealed to state and federal courts, frequently resulting in delays to actions that benefit competition. For example, BellSouth has appealed thirteen (13) TRA decisions since 1996, including decisions on telephone directories, directory assistance, the classification of basic and non-basic services, reciprocal compensation,

payphone rates, as well as five of the TRA's arbitration decisions. Most of these appeals are still pending. In addition, FCC decisions on interconnection, unbundled network elements, universal service and advanced services have also been appealed. Such appeals, while clearly within the rights of the parties, have undoubtedly had a chilling effect on the development of local telephone competition and arguably have contributed to the financial problems that CLECs are currently experiencing.

In addition, the FCC preempted the Tennessee statute protecting incumbent telephone companies with less than 100,000 lines from local telephone competition unless the incumbent elects to compete outside of its service area. In February 1998, Hyperion of Tennessee (now Adelphia), a competing provider, challenged that exemption by requesting permission from the TRA to compete for customers in the area served by Tennessee Telephone Company. Hyperion argued that the small company exemption constitutes a "barrier to entry" in violation of the federal telecommunications act. Hyperion relied upon the FCC's preemption of similar laws in Texas and Wyoming. The TRA found, however, that the small company exemption was essential to preserve universal service and is consistent with the federal act. The FCC agreed with Hyperion that the law does constitute a barrier to entry and thus preempted the TRA from enforcing the statute. The TRA subsequently asked the FCC to reconsider but on January 8, 2001 such request was denied.

As time passes, the TRA is becoming increasingly concerned that residential consumers and consumers in rural areas of the State will never have the competitive choices for telephone services envisioned by the General Assembly and Congress and that such consumers will see considerable increases in their telephone charges as a result. Competitors have demonstrated an interest in serving only customers located in the more densely populated areas, typically business customers in urban areas, and an obvious reluctance to enter less populated areas such as residential neighborhoods or rural areas. The current shortage of capital dollars available to CLECs will only exacerbate this problem.

Since 1995, incumbent providers have consistently increased charges to the inelastic residential consumers to offset price reductions to competitive business services as permitted under the price regulation statutes. For example, since electing price regulation, BellSouth and Sprint/United have implemented directory assistance charges and increased the prices of custom

calling features like Caller ID, Call Forwarding and Three-Way Calling. In addition, Sprint/United has increased the toll charges for calls in the Tri-Cities area. This pricing practice will likely continue unless competition develops in all market segments.

Consumer Prices

Tennessee consumers spend less than the national average for telecommunications services. Nationwide, consumers spend $55 per month for telecommunications or 2.3% of their total expenditures. Tennesseans, on the other hand, spend an average of $46 on telecommunications. Nonetheless, many consumers have experienced considerable changes in their telephone bills, both positive and negative. For example, the charges to consumers making less than thirty minutes of long distance calls per month have increased significantly due to the implementation of minimum usage charges and increases to the basic long distance rate schedules by the nations dominant long distance providers. In addition, customers purchasing multiple (more than three) extra features like Caller ID or Call Forwarding are paying less than in 1995 but customers purchasing just one or two features are paying more. Also, the price of Touchtone has been reduced for most Tennessee consumers.

Generally, low volume users of telephone services are paying more today than in 1995, while high volume customers are seeing savings. Low volume users in Tennessee have seen their bills increase an average of 4% mainly because of the imposition of federal surcharges and minimum usage charges by long distance companies. High volume users, on the other hand, have been the benefactors of volume discounts from both local and long distance companies and have seen their phone bill decline by an average of 12%. Average users have seen just a slight increase, 2%, in their bills since 1995.

The Status of Universal Service

Telephone penetration rates, or the percent of households in a given area that receive telephone service, are a typical measure of residential universal service. County penetration rates from the 1990 Census varied from a low of 81% in Hancock County to a high of 97% in Williamson County. The overall rate of residential telephone subscribership in Tennessee in 1990 was 93.3%, the same as the nationwide rate. Data from the 2000 Census is not yet available, but data from the

August 2000 Current Population Survey (CPS) conducted by the Census Bureau show that Tennessee reached an overall telephone penetration rate of 95.8% in 2000, while the nationwide penetration rate increased to only 94.1%. In Tennessee's rural areas and non-metropolitan cities, this rate falls to 93.7% and 93.4% respectively. Suburbs show a telephone penetration rate of 97.7%, while large metropolitan areas have the highest rate of telephone subscribership at 98.3%. The differences in household telephone service are more marked along income lines than along population lines, with households with annual incomes of less than $15,000 having a telephone penetration rate of only 82.1%. At the other end of the spectrum, among respondents with household incomes greater than $25,000 per year, less than one half of one percent reported having no telephone.

Past policies to encourage universal telephone service set lower local telephone rates in rural areas than in urban areas, even though the costs of providing the service are generally higher in rural areas. This presents a dilemma for competitive entry in rural areas, as current prices may not yield enough revenue to cover entrants' costs. Consequently, Tennessee's 1995 Telecommunications Act provides for a special fund to subsidize residential telephone service in high cost areas at current prices. The TRA is currently conducting separate proceedings for the State's rural and non-rural carriers to determine if a universal service subsidy is needed to maintain affordable telephone service in the State.

Tennessee also has programs to help provide telephone service to low-income households and to the deaf and hard of hearing. The Lifeline and Link-up programs provide qualifying low-income households with assistance of up to $10.50 on their monthly telephone bills, as well as reduced fees on the installation of new telephone service. A total of 36,701 low-income households in the State saved $4,998,672 during the year 2000. In addition, since May 2000, the TRA has distributed over 800 telecommunications devices for the deaf as part of the Telecommunications Assistance Program created by the General Assembly in Chapter 417 of the Public Acts of 1999.

The TRA is also closely monitoring the "digital divide" in Tennessee. The "digital divide" is commonly defined as the divide between those with access to computers and the Internet and those without. In May 2000, the TRA issued a study titled "Tennessee's Digital Divide" to examine computer ownership and Internet access in the State. The study found that Tennessee's digital divide

is even more prevalent than the national divide. Although computer ownership in Tennessee has doubled since 1994, only 37.5% of Tennessee households had a computer in 1998 and even fewer households had access to the Internet. Recent studies have shown that the current percentage of Tennessee households with a computer is now 46%, 10% below the national average and 41st among all states. Of even greater concern is the fact that computer penetration in Tennessee is growing at a slower rate than the nation as a whole and that access to these tools of technology is split among various demographic groups. For example, the most glaring demographic discrepancy is the ever-widening income divide. Despite declining computer prices, the gap in computer ownership between Tennessee households with annual incomes greater than $75,000 and households with annual incomes of $15,000 or less increased by 13% between 1997 and 1998. Similar divides were found within Tennessee's racial, education, geographic and family make-up demographics.

The TRA followed up the initial digital divide study with an analysis of computer ownership among school age children. This study revealed that, while Tennessee exhibits many of the same technology access gaps as the nation as a whole, there are some important differences in the nature of Tennessee's digital divide as compared to the national digital divide. For example, Tennessee students report a much higher rate of computer and Internet access at school than do students nationally. There are, however, still identifiable groups of students in Tennessee who lag behind the student population as a whole in computer and Internet access. Gaps in access have commonly been found among people of different races, household income levels, head of household educational attainment levels, and community population densities.

Telephone Numbers and Area Codes

New technologies, the demand for new services, the increase in the number of telecommunications providers, as well as outdated methods for assigning telephone numbers, have resulted in an assault on available telephone numbers and forced the TRA to add four new area codes since 1995. In an effort to promote efficient use of these numbering resources and to reduce the need for further area code relief, the TRA requested and received authority from the FCC to implement number conservation methods. Subsequently, the TRA ordered that numbers be allocated to carriers in thousand block increments instead of ten thousand number increments as previously

done. In addition, the TRA has requested that carriers return unused number blocks and is exploring the consolidation of rate centers in order to further conserve numbers.

Service Quality

Service performance of telecommunications providers is a critical component for effective and efficient telecommunications. In recognizing the need to review this important component, the General Assembly exhibited its intent to ensure that the road to telecommunications local competition not produce the unintended consequences of deterioration in the level of telecommunications service. In fact, T.C.A. § 65-5-208(1) requires incumbent telephone companies that apply for price regulation to continue to provide, at a minimum, the level of service quality as existed on June 6, 1995. Two of the three price regulated companies in the State, BellSouth and Sprint/United have seen a major increase in the number of service complaints since 1995. BellSouth has experienced a 49% increase in customer complaints since 1995 while Sprint/United has seen a 155% increase in complaints since 1995. Most of the customer complaints pertain to delayed installations and to service issues. The third price regulated company, Citizens, has seen their number of customer complaints reduced by 50% since 1995.

The TRA has also seen a drastic reduction in the unauthorized switching of a consumer's telecommunications carrier, commonly referred to as "slamming." The 310 slamming complaints investigated by the TRA during 2000 is the lowest number of such complaints since 1994, when 193 were reported. A major reason for this reduction in slamming complaints is the revised slamming laws passed by the General Assembly in 2000. In that legislation, the fine that may be imposed by the TRA for slamming violations was increased from a maximum of $100 per offense to a maximum of $1,000 per offense.

In conclusion, since 1996, the TRA has continued to make noteworthy progress in managing the transition to competitive local telecommunications markets by implementing federal and state legislation to open the service territories of the incumbent local exchange carriers. As this process continues, it is our hope that telecommunications competition will one day provide all Tennesseans with competitive choices, as well as lower prices for telecommunications services.

THE STATUS OF TELECOMMUNICATIONS IN TENNESSEE

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MAPS AND APPENDICES

I. INTRODUCTION

This is the Tennessee Regulatory Authority's ("TRA") third report to the Tennessee General Assembly on telecommunications in Tennessee. This report, a collaborative effort by numerous divisions of the TRA, focuses on the status of local telephone competition in the state, current and upcoming telecommunications technologies and competitive alternatives available to Tennesseans. Detailed statistics are included pertaining to Tennessee's local exchange carriers including the competitive local exchange carriers ("CLECs") and incumbent local exchange companies ("ILECs"). Additional information is provided on the financial assistance available to low-income consumers and the quality of service provided by telephone carriers.

The TRA is responsible for regulating public utilities in Tennessee. Such regulation includes economic regulation, service quality regulation as well as consumer assistance. Under Tennessee law, all investor-owned gas, electric, water and telecommunications companies are classified as public utilities. Accordingly, the TRA is responsible for regulation of six (6) natural gas utilities, twelve (12) water and sewerage companies, one (1) electric provider and more than 500 local and long distance telecommunications providers operating in the state. In 1995, the Tennessee General Assembly revised the laws for regulating telecommunications in Tennessee. One year later Congress re-wrote the Federal telecommunications laws in the first major rewrite of federal telecommunications laws since 1934. The 1995 state telecommunications act states that "The General assembly declares that the policy of this state is to foster the development of an efficient, technologically advanced, statewide system of telecommunications services by permitting competition in all telecommunications services markets, and by permitting alternative forms of regulation for telecommunications services and telecommunications services providers." The state act introduces local telephone competition in areas served by incumbents with more than 100,000 access lines, allows for alternative forms of rate regulation for incumbent telephone companies, calls for the creation of a universal service fund if such is needed to maintain affordable rates for basic telephone services. The state act also requires telecommunications service providers to file a plan shall for purchasing goods and services from small and

minority telecommunications businesses and creates the small and minority-owned telecommunications business assistance program to help fund new telecommunications ventures in the state.

The federal telecommunications act contains similar objectives to the state act but is more detailed in how to achieve those goals. For example, the federal act contains specific requirements for interconnection of the networks of different providers, and requirements pertaining to collocation, unbundled access, dialing parity, number portability, access to rights of way and resale. The new laws, however, only establish the basic framework for achieving these new goals. It is the responsibility of state and federal regulators, like the TRA, to adopt rules and policies to implement this framework. For example, the federal act requires the Regional Bell Operating companies to unbundle their networks and sell the individual elements to competitors at "cost based rates." It is the responsibility of state and federal regulators to identify the individual elements, review the cost studies and set the appropriate rates to comply with the federal act.

As shown on Table 1, the year 2000 has been a productive year for the TRA. As of December 31, 2000, the TRA had certificated 90 CLECS to do business in Tennessee. This represents a 196% increase in the number of CLECs approved on December 31, 1998. Contrary to popular belief, this increase in the number of competitors actually increases the workload of the TRA. With every new local competitor, CLEC, approved by the TRA, the recurring workload of the TRA increases proportionately. For example, a 30% increase in approved CLECs typically translates into a 30% increase in filings and workload.

Once a CLEC is approved to operate in the State, interconnection agreements between the CLEC and incumbent provider must be submitted for review and approval of the TRA. These interconnection agreements typically have terms of two to three years and must be submitted for every incumbent provider in which the CLEC will compete. If the CLEC and incumbent cannot agree on an interconnection agreement, a request for arbitration is filed and the TRA acts as arbitrators of the disagreement. Once the arbitration is completed and an agreement is approved, if either of the parties violate the terms of the agreement, a complaint

is filed that must be resolved by the TRA. Arbitrations and resolution of interconnection complaints typically require 750 to 1000 employee hours to resolve. State and federal statutes include mandatory deadlines for the TRA to act on CLEC applications and interconnection issues. Also, each new CLEC must file tariffs containing the rates and terms of service for review by the TRA. These tariffs are continually updated. The aforementioned process does not take into account the special proceedings such as the pricing of unbundled network elements, universal service and numerous other proceedings required by law or mandated by the FCC.

TRA ACTIVITY IN 2000

- ◊ Considered 1065 Utility Petitions
- ◊ Issued 342 Orders Involving Utility Matters
- ◊ Investigated 665 Utility Tariff Filings
- ◊ Reviewed 124 Interconnection and Resale Agreements
- ◊ Investigated 121 Reseller and Payphone Provider Applications
- ◊ Held Hearings on 80 Days During Year
- ◊ Investigated and Heard 46 CLEC Certification Requests
- ◊ Mediated 2429 Consumer Complaints
- ◊ Conducted 4 Formal Rule Violations Investigations
- ◊ Collected $351,200 in Fines for Rule Violation
- ◊ Secured $625,320 in Consumer Refunds as a Result of Complaint Investigations
- ◊ Approved 50 Mergers, Acquisitions and/or Transfers of Authority

Table 1

II. THE STATUS OF COMPETITION

Since we issued our previous report on telecommunications competition in March 1999, the TRA has continued to make noteworthy progress in managing the transition to competitive local telecommunications markets. Numerous new providers have entered the market, and the market share held by competitive providers has increased significantly. Recent developments, however, have shown that some of the new providers are having difficulties remaining in the local exchange market. Following is a discussion of the status of competition in Tennessee, including an overview of the competitors, the services being offered, the impact of new technologies and TRA decisions impacting telecommunications in Tennessee.

Competitive Activity

Prior to the rewrite of state and federal telecommunications laws, local telecommunications was provided by a single monopoly provider, the Bell Operating Company in most areas. The long distance market, on the other hand, has been open to competition since the divestiture of AT&T in 1984. Tennessee currently has more than 300 companies certified to provide long distance service in Tennessee, although three providers, ATT, MCI and Sprint, still control 88% of the State's long distance market.

Regarding local telephone service, the State's nineteen (19) incumbent telephone companies provide service to 92% of the 3.7 million telephone lines in Tennessee.[3] BellSouth, an incumbent provider, serves approximately 73% total lines in the State, Sprint/United serves 7% of the lines, all in northeast Tennessee, seventeen other incumbent companies and telephone cooperatives serve 12% of the lines with CLECs and resellers serving the remaining 8% of the State's telephone lines. Additional access lines data can be found on Appendix 1.

[3] The nineteen incumbent telephone companies in Tennessee include ten investor owned telephone companies and nine telephone cooperatives.

Three (3) forms of competition exists in Tennessee's local telecommunications market; 1) Facilities-based; 2) Resale and; 3) Combination of resale and facilities-based services. New facilities-based providers are commonly referred to as competitive local exchange carriers, or CLECs.

TYPES OF LOCAL TELEPHONE COMPETITION
Resale – Competitors purchase a service from the incumbent and resell the exact service to end-users. Facilities-Based – Competitor uses own facilities to provide competitive service. Combination – Competitor uses a portion of own facilities and facilities of incumbent to provide competitive service.

Table 2

Facilities-based providers (CLECs) build their own networks to provide competitive local exchange telephone service. CLECs typically require a substantial up-front capital investment to provide local service. In addition, CLECs must obtain access to rights-of-way in order to build facilities. However, once the facilities are in place the potential profit margin is greater for CLECs than for resellers. Because of the capital investment required, many CLECs first test the local markets as pure resellers before building their own networks.

The TRA has certificated ninety (90) companies to build telecommunications facilities in the State. Thirty (30) of these companies are currently providing services. Many of the other certificated carriers are still constructing their Tennessee networks.[4] These thirty competitors serve 225,000 lines in Tennessee. This represents 6% of the total lines in the state, which is consistent with the national average for CLEC penetration. Since 1995,

[4] The TRA periodically surveys CLECs that have been inactive for at least two years to determine if proceedings should be initiated to revoke such CLEC's certification.

CLECs have invested approximately $500 million in telecommunications facilities in Tennessee. Table 3 offers a comparison of CLEC activity between 1998 and 2000.

GROWTH IN TELECOMMUNICATIONS COMPETITION
1998 TO 2000

	12/31/1998	12/31/2000
Number of CLECs Certificated	30	89
Number of CLECs Providing Service	15	30
% of Total Lines Served by CLECs	2%	10%
% of Residential Lines Served by CLECs	0%	2%
% of Business Lines Served by CLECs	7%	32%
CLEC Investment	$170 million	$500 million

[1/] In areas served by non-rural carriers.

Table 3

The federal act requires the Bell Operating Companies to "unbundle" their networks so that new providers can purchase network elements from the incumbent providers. Many CLECs are constructing their networks entirely by purchasing unbundled network elements from the incumbents or by combining the network elements with their own facilities. For example, CLECs may purchase their own switching equipment but rent loop facilities, the wires running from the switching equipment to the consumer, from the incumbent local provider. This "combination" approach has proven to be the most popular approach for new competitors in the local telephone market.

The federal act also allows a competitor to collocate its equipment in the same building as the incumbent provider. The number of CLECs collocated in an incumbent's central office is another effective measure of the progress of local competition. As shown on Appendix 2, 35% of BellSouth's central offices have two or more competitors collocated while 58% of the central offices have no competitors collocated. This data clearly demonstrates that competitors are concentrating on the metropolitan areas of the state with little interest for serving the rural areas.

Under the resale method, competitors purchase an existing service from the incumbent provider and resell the exact service to end-users. Resale is attractive to many providers because it allows providers to enter the market with minimal investment. On the other hand, because of fixed profit margins and the lack of pricing flexibility and service offerings, this is not considered the optimal method of competing and many of the large competitors shy away from resale. Most local resellers are niche providers, such as prepaid providers that offer service to customers who have had their service disconnected by the incumbent provider. As of December 31, 2000, 89 resellers are serving 65,000 access lines in the state. Approximately half of those lines are to residential customers.

The Competitors

XO (formerly Nextlink), U.S. LEC, and Adelphia (formerly Hyperion) are the most active CLECs in Tennessee. Numerous other providers, however, are increasing their activity in the state, including the nation's two largest long distance providers, AT&T and WorldCom,

as well as Time Warner, a national cable provider. CommSouth and Express Connection are the most active local resellers in the state.

Many of the new providers are limiting their services to specific business segments, such as business services or high-speed data services. For example, a number of companies are providing only high-speed data services but not voice telecommunications. These companies are referred to as DLECs, or Data Local Exchange Carriers. In addition, building local exchange carriers or BLECs are wiring high-rise buildings with fiber optic cables to provide high-speed data services to the tenants of those buildings. A more comprehensive discussion of these providers can be found in Chapter IV.

Electric municipalities are becoming active in telecommunications. Chattanooga Electric Power Board is the first electric municipality in Tennessee to offer local telephone service, although Memphis Networx, a joint venture involving Memphis Light Gas and Water, has an application pending. The role that electric companies will play in the evolution of local competition is unclear at this time, but their embedded facilities and customer base suggest that electric companies will have a definite impact on the emergence of local telecommunications competition.

Tennessee is seeing measurable competitive activity in the business segments of the local telecommunications markets. Virtually all of the CLEC lines in Tennessee are business lines located in the metropolitan areas of the state. Business customers in metropolitan areas are the lowest cost customers to serve because they typically are in densely populated locations close to the telephone company's switching facilities (the central office). Competition in rural areas and in the residential market, however, is nearly nonexistent. Ben Lomand Communications, the CLEC owned by Ben Lomand Telephone Cooperative is the only CLEC currently providing facilities-based residential local service in the State.[5]

[5] Ben Lomand Communications is providing residential services in Warren and White counties.

CLEC Financial Struggles in 2000

The development of local telephone competition has been slower than many lawmakers had anticipated. One of the biggest reasons is the enormous investment required to construct a telephone network. Local telephone service requires more facilities and more capital than long distance telephone service. Long distance networks reflect a $55 billion investment spanning 100,000 miles nationwide. The local telephone network represents a $300 billion investment covering 4,000,000 miles. The substantial capital dollars required to build telephone networks is beginning to have a detrimental impact on some of the new competitors as such dollars become scarce. A number of national CLECs have declared bankruptcy, or are realizing major financial problems. Other CLECs have seen a significant decline in their stock prices and the ability to attract the new capital needed to maintain operations has been depressed. According to various reports in the financial press in the fall of 2000, investor sentiment turned sharply negative towards the telecommunications sector when CLECs were unable to convince investors that prevailing and projected profits were large enough to justify the prevailing level of investment and high share prices. In the nine months after its March 2000 peak, the NASDAQ Telecommunications Index, which includes numerous CLECs, fell 57 percent. In addition to the CLEC difficulties, AT&T, Sprint, and Worldcom have announced major company reorganizations with decreased focus on serving residential long distance customers and a number of other key competitors that were expected to challenge BellSouth for market share appear to be significantly cutting back their operations.

The Impact of Technology on Competition

Technology is rapidly reshaping the competitive landscape of telecommunications. New technologies such as cable, wireless, satellite, and voice over Internet Protocol likely will create new avenues and providers for customers to receive traditional local and long distance voice services, profoundly changing the market structure from the customers' point of view at some point in the future. It is impossible to overstate the impact that the Internet has had on telecommunications and life in general. Billboards, newspaper advertisements,

radio and television advertisements contain all include the advertiser's Internet address. Our vocabulary is replete with Internet lingo such as dot.com and e-commerce. The Internet is universal and the telecommunications network connects all of these computers to the Internet. Some statistics on the Internet:

- In 2000, 1.4 million Tennessee households had access to the Internet, more than twice the number with access in 1997.
- In 1995 there were 3 million Internet users in the US, in 2000 there were 80 million.
- The Internet is the fastest growing technology the world has ever known. According to the United States Department of Commerce, the Internet has shattered the penetration rates of all previous technologies. Radio was in existence 38 years before 50 million people owned a radio. Television took 16 years. PCs took 16 years. The Internet reached 50 million people in 4 years and is still going strong.
- Electronic Commerce is now a half a trillion-dollar industry.

The Internet has caused an explosion of data traffic over the public telephone network. Whereas five years ago 75% of traffic on the network was voice traffic and only 25% was data, today over half of the telecommunications traffic is estimated to be non-voice data traffic. The telephone has taken a back seat to the computer when it comes to telecommunications. Data traffic is doubling every 100 days, and the industry is struggling to keep up with the demand. On the other hand, voice traffic is doubling every twelve years.

The Internet has been responsible for many of the new telecommunications technologies we are seeing today. For example, the search for ways to transfer large quantities of data at break-neck speed has lead to the proliferation of broadband services such as digital subscribe lines (DSL) and cable modem services. Broadband services transmit data up to 50 times than standard dial up modems. For example, suppose a friend e-mails you a

picture of his kids. Using a traditional dial up modem it takes 10 minutes to download that picture, with broadband it takes 12 seconds. The Bell Operating companies are the largest DSL providers in the country. However, most of the competitive carriers are actively marketing DSL. BellSouth recently announced that they have signed up more than 200,000 subscribers in its nine state region to its DSL service far exceeding its expectations. At the end of 2000, however, BellSouth was capable of providing DSL to 700,000 Tennessee households.

A significant concern among regulators with regard to broadband services is the potential for monopoly pricing of these services and the impact of such action on the affordability of broadband services. The apparent excess supply of broadband services as demonstrated by comparing BellSouth's DSL penetration and DSL availability figures suggests that competitive forces could reduce broadband prices. Until recently this appeared to be happening. Competition among numerous broadband providers was putting downward pressure on broadband rates resulting in a series of price reductions over the last year. Recently, however, the pricing of DSL broadband services is starting to exhibit monopolistic tendencies. A reduction in the number of broadband providers due to the financial struggles of CLECs and other Internet Service Providers (ISPs) have afforded the Bell Operating Companies and other large ISPs the opportunity to increase the prices of their broadband offerings. In May 2001, BellSouth, Verizon, and SBC (all Bell Operating Companies) as well as AT&T increased the rates for high speed Internet access by five to ten dollars per month. Similarly, AOL recently raised the monthly price of its Internet service (nonbroadband) by nearly two dollars; however, Microsoft announced it would not raise its monthly rate at this time.

The potential availability of DSL and other advanced services was enhanced dramatically in November 1999 when the FCC ordered incumbent telephone providers to share its lines with CLECs and other Internet Service Providers. Line sharing permits consumers to obtain high speed Internet access from either the incumbent or competitive carriers, without having to forego voice service from their provider of choice. Since line sharing allows customers to receive both voice and data services on the same line, it

eliminates the need for consumers to procure a second line. This allows for more efficient use of the existing telephone network. For example, a consumer could use BellSouth for its voice telecommunications and AT&T for its high speed Internet access service all over a single telephone line. Subsequent to the FCC's order requiring line sharing, in December, 2000, the TRA established cost-based rates and regulations for the provision of line sharing by incumbent providers.

Incumbent providers were already using line sharing technology to offer basic telephone service and DSL services over the same line prior to the FCC's decision. Thus, the actions by the TRA and the FCC actions placed competitive carriers on a more equal footing with the incumbents while not affecting the incumbent ability to offer service. Line sharing between incumbents and CLECs is developing in Tennessee, but slowly. For example, as of May 2001, BellSouth was sharing less than 300 of its lines with CLECs.

Although cable television companies have not entered the local telecommunications markets as they indicated they would in 1995, cable companies are now offering broadband, Internet access through the cable television network using cable modems. Cable modem service provides broadband transmission over cable television lines instead of the traditional telephone lines. Through mergers and acquisitions, including merging with TCI merger, AT&T is now the largest cable provider in the country and is extremely active in the broadband and Internet service markets. AT&T formerly owned Intermedia Partners, a local cable provider, but divested it as part of the MediaOne merger conditions. AT&T also owns a portion of @Home, a national Internet service provider, while Time Warner, as a result of its merger with AOL, also has a major presence in the cable broadband market. No cable companies, however, currently have interconnection agreements in Tennessee to offer traditional voice telecommunications services.

Wireless Telephony

Providers of mobile wireless telephone services appear to be positioning themselves to compete with the State's landline providers. According to the FCC, nearly one in every three Tennesseans subscribes to wireless telephone service which is exactly the national average. It

is estimated that the price of mobile telephone service declined by 11.3 percent between the end of January 1999 and the end of January 2000, and by twenty (20) percent between 1998 and 1999. BellSouth presently has interconnection agreements with nine (9) wireless providers in Tennessee.

New technologies such as third generation wireless will play a vital role in determining if wireless service can truly compete with landline services. Third generation wireless provides Internet access and e-mail at broadband speeds over a mobile wireless phone. Although we are seeing some limited applications of third generation wireless, most experts suggest that we have only scratched the service of the potential of third generation wireless and point to Japan and other Asian countries as to the popularity and potential of this new technology.

It appears that the largest landline providers, the Bell Operating Companies, also recognize the importance of wireless providers in the telecommunications marketplace. In October 2000, BellSouth combined substantially all of its domestic wireless operations with those of SBC Communications, another Bell Operating company, to form Cingular Wireless. The new company is now the second largest wireless carrier in the United States.

Impact of Regulation on Competition

With the new laws and the introduction of local telephone competition, the role of regulators has changed dramatically. Previously, the primary responsibility of telecommunications regulators was to set prices based on accounting data and financial forecasts. Now, the focus is on developing a competitive marketplace while maintaining affordable prices. Virtually every decision made by the TRA must consider state laws, federal laws, decisions by the FCC and the courts and the public interest.

Regulators now serve as referees, arbitrators and mediators to resolve disputes between competitive carriers. Both incumbent providers and new entrants argue that their positions are the best for the development of the competitive marketplace and should be adopted by the TRA. The new entrants argue that regulation should be limited to the

incumbent monopoly, not the CLEC, while the incumbents contend that a "level playing field" is what is needed to further competition. William Kennard, the former Chairman of the FCC best articulated this regulatory dilemma in a speech to a group of Internet service providers on September 12, 2000:

> Your industry is on the map now. How do I know that? It's not just because this conference gets bigger and bigger every year. It's because in Washington I am beginning to hear calls for a level playing field. I hear this a lot in my job. Everyone says that I have to guarantee a level playing field. I've learned that when most people ask me to level the playing field, they want less regulation for themselves and more for their competitors.
>
> But while symmetry may be important in art and architecture, in the world of economic regulation, it's not necessarily so. In regulation, symmetry does not necessarily equate with fairness. We have to distinguish between treating the same differently and treating that which is different the same. A heavyweight and a middleweight may box in the same ring, but no one would say that it's a fair fight. So is it a fair fight to expect a start-up just out of the incubator to take on a hundred-year-old incumbent - an incumbent which, thanks to an exclusive franchise given by government, owns 96% of the local market?
>
> It's not that we don't want a level playing field. In fact, we are working hard to liberate all competitors from regulation. But during this transition, the answer is not to saddle nascent technology with the increasingly obsolete legacy regulations of the past. It's not that one playing field is level and the other is not. They're two different playing fields... In short, one-size regulation does not fit all.
>
> I also think that regulation is too often used as a shield, to protect the status quo from new competition - often in the form of smaller, hungrier competitors -- and too infrequently as a sword -- to cut a pathway for new competitors to compete by creating new networks and services. You see, all too often

> companies work to change the regulations, instead of working to change the market. I call this behavior 'regulatory capitalism.' Regulatory capitalism is when companies invest in lawyers, lobbyists and politicians, instead of plant, people and customer service. It's always easier to prowl the halls of Congress than compete in the rough and tumble of the marketplace. Regulatory capitalists would rather litigate than innovate.

Since 1996, the TRA has successfully implemented federal and state legislation to open the service territories of the incumbent local exchange carriers. Competitive local exchange carriers now have the regulatory framework to challenge incumbent providers like BellSouth for market share in Tennessee.

It is the mission of the TRA "to facilitate the development of fair competition in Tennessee by balancing the interests of consumers and telecommunications providers." Consistent with this mission, the TRA has made countless decisions promoting telecommunications competition in Tennessee. In addition to certificating ninety facilities-based providers the TRA has:

- Established cost-based rates for the individual elements of BellSouth's network. Required that BellSouth provide element combinations.
- Established rates that allow CLECs to share the telephone line with BellSouth for the provision of broadband data services and voice services over the same line.
- Authorized a BellSouth affiliate to enter the markets of other non-rural providers.
- Required the payment of reciprocal compensation on calls to Internet service providers.
- Adopted regulations that allow consumers to change local service providers without changing their telephone numbers.

- Established performance standards applicable to the offering of wholesale services to CLECs by BellSouth.

- Established discounts on the wholesale services offered by the two largest incumbent providers, BellSouth and Sprint/United.

- Established regulations for dialing parity to allow consumers to complete calls without dialing extra digits regardless of their provider.

- Implemented number portability to allow customers to change providers without changing their numbers.

In addition, the Authority is in the process of creating a portable universal service fund that will provide support to customers in high cost areas regardless of their choice of providers.

Many of the decisions by the TRA and the FCC have been appealed to state and federal courts, frequently resulting in delays to actions that benefit competition. For example, BellSouth has appealed fourteen (14) TRA decisions since 1996 including decisions on telephone directories, directory assistance, the classification of basic and non-basic services, reciprocal compensation, payphone rates, as well as five of the TRA's arbitration decisions. Most of these appeals are still pending. In addition, FCC decisions on interconnection, unbundled network elements, universal service and advanced services have also been appealed. Such appeals, while clearly within its rights, have undoubtedly had a chilling effect on the development of local telephone competition and arguably have contributed to the financial problems that CLECs are currently experiencing.

In addition, the FCC preempted Tennessee's statute protecting incumbent telephone companies with less than 100,000 lines from local telephone competition unless the incumbent elects to compete outside of its service area. In February 1998, Hyperion of Tennessee (now Adelphia), a competing provider, challenged that exemption by requesting permission from the TRA to compete for customers in the area served by Tennessee Telephone Company. Hyperion argued that the small company exemption constitutes a

"barrier to entry" in violation of the federal telecommunications act. Hyperion relied upon the FCC preemption of similar laws in Texas and Wyoming. The TRA found, however, that the small company exemption was essential to preserve universal service and is consistent with the federal act. The FCC agreed with Hyperion that the law constitutes a barrier to entry and thus preempted the TRA from enforcing the statute. The TRA subsequently asked the FCC to reconsider but on January 8, 2001 such request was denied.

Another recent event that the TRA is closely monitoring is BellSouth's decision to exit the payphone business. In February 2001, BellSouth announced that it "will begin transitioning out of the business immediately and will complete the transition by December 2002." Private payphone providers will continue offering payphone services. The TRA will closely monitor the impact of this decision to determine if there is a need to require the installation of public interest payphones anywhere in the State. BellSouth has approximately 15,000 payphones in Tennessee.

Consumer Prices

As time passes, the TRA is becoming increasingly concerned that residential consumers and consumers in rural areas of the State will never have the competitive choices for telephone services envisioned by the General Assembly and Congress and that such consumers will see considerable increases in their telephone charges as a result. Competitors have demonstrated an interest in serving only customers located in the more densely populated areas, typically business customers in urban areas, and an obvious reluctance to enter less populated areas such as residential neighborhoods or rural areas. The current shortage of capital dollars available to CLECs will only exacerbate this problem.

Since 1995, incumbent providers have consistently increased charges to the inelastic residential consumers to offset price reductions to competitive business services as permitted under the price regulation statutes. For example, since electing price regulation, BellSouth and Sprint/United have implemented directory assistance charges and increased the prices of custom calling features like Caller ID, Call Forwarding and Three-Way Calling. In addition,

Sprint/United has increased the toll charges for calls in the Tri-Cities area. This pricing practice will likely continue unless competition develops in all market segments.

Tennessee consumers spend less than the national average for telecommunications services. Nationwide, consumers spend $55 per month for telecommunications or 2.3% of their total consumer expenditures. Tennesseans, on the other hand, spend an average of $46 on telecommunications. Nonetheless, many consumers have experienced considerable changes in their telephone bills, both positive and negative. Both local and long distance telephone companies have "rebalanced" their rates. For example, the long distance charges to consumers making less than thirty minutes of long distance calls per month have increased due to the implementation of minimum usage charges or increases to the basic long distance rate schedules by the nations dominant long distance providers. In addition, customers purchasing multiple (more than three) extra features like Caller ID or Call Forwarding are paying less than in 1995 but customers purchasing just one or two features are paying more. Also, the price of Touchtone has been reduced for most Tennessee consumers. (Note: The TRA and FCC jointly regulate telecommunications rates in Tennessee; the TRA regulates intrastate prices while the FCC regulates interstate prices.)

Generally, low volume users of telephone services are paying more today than in 1995, while high volume customers are seeing savings. However, in order to better understand how consumers have been affected, we will divide them into the following categories based on their calling patterns and features used: 1) Low volume users are those customers averaging less than five (5) long distance calls in a month and do not subscribe to any extra calling features; 2) Average users are those customers who make 15 to 20 long distance calls each month and subscribe to two calling features, and; 3) High volume users customers averaging more than 35 in a month and subscribe to five or more calling features.

As shown on Table 4, the price of telephone service for low and average volume users has increased since 1995. Low volume users in Tennessee have seen their bills increase an average of 4% mainly because of the imposition of federal surcharges and minimum usage charges by long distance companies. High volume users, on the other hand, have been the

benefactors of volume discounts from both local and long distance companies and have seen their phone bill decline by an average of 12%. Average users have seen just a slight increase, 2%, in their bills since 1995.

Since 1995, the federal surcharges appearing on telephone bills has increased from $3.50 per residential line in 1995 to the current average of $5.85 per line. These surcharges, which are under the jurisdiction of the FCC, are designed to recover the costs of the telephone network or to fund federal initiatives. Currently included on customers bills are 1) a monthly $.35 number portability surcharge to ensure that all consumers have the ability to keep their existing telephone numbers when changing local telephone service providers; 2) a universal connectivity surcharge to provide Internet hook-ups to schools, libraries and rural health care providers, and: 3) the subscriber line charge to recover the cost of the line from the customer to the telephone company's central office.

Rate increases to low volume users have been a cause of great concern by consumer groups throughout the nation. According to research by the Consumer Federation of America, there is a strong correlation between income and telephone usage and that lower income households are most likely to be the low volume users experiencing the higher prices. While the Tennessee General Assembly attempted to protect consumers by freezing rates for basic telephone services, the federal surcharges on consumer's bills have resulted in a 4% increase in the price of basic telephone service since 1995.

It is also important to note that advertising by long distance carriers can be misleading. Long distance companies promote calling plans with low per minute rates. That low rate, however, normally applies only to out-of-state calls while calls within the state are assessed a much higher charge. For example, one of the state's major long distance providers offers a calling plan priced at $.05 per minute for out-of-state calls but as much as $.22 per minute on in-state calls. The carrier advertises the $.05 rate but makes no mention of the $.22 in-state rate. There are also fixed monthly fees associated with calling plans that apply in addition to the per minute charges. This practice is typical of most of the state's long distance providers.

COMPARISON OF TELEPHONE CHARGES 1995 TO 2000				
Average Monthly Expenditures				
	1995	**2000**	**$ Increase (Decrease)**	**% Increase (Decrease)**
Low Volume Users	$20.39	$21.21	$0.82	4%
Medium (Average Volume Users	$45.58	$46.51	$0.94	2%
High Volume Users	$103.24	$90.77	$(12.47)	(12)%

Table 4

III. SERVICE CAPABILITIES AND THE AVAILABILITY OF SERVICE OFFERINGS BY TELECOMMUNICATIONS SERVICE PROVIDERS

GENERAL

There are presently thirty (30) certificated carriers actually providing service to Tennessee consumers. Nine (9) of these providers do so as a reseller only. Twelve (12) provide only facility-based service. Nine (9) provide service as both a reseller and as a facility-based carrier. These carriers serve 290,000 access lines in Tennessee. Of the 290,000 access lines served about 37,000, or 13%, are used to provide residential service. It is interesting to note that almost all the residential access lines served by competitive carriers are provided by resellers, while most of the business access lines are served by facility-based carriers. This shows that competitive carriers are expanding into the residential market at a much slower rate than in the business market.

A. Competitive Local Exchange Carriers

Facilities-based providers (CLECs) build out their own networks to provide competitive local exchange service. However, some CLECs are also resellers of service from other carriers. Facility-based carriers target business customers who have a large number of access line and telecommunications service requirements. Additionally, they target areas that contain high concentrations of these customers, predominately the state's four metropolitan areas. This approach allows these carriers to build the facilities necessary to serve their customers while maximizing revenue streams and resulting profits. This approach, and the resulting revenue streams, also makes it possible for the carrier to repay the capital required to build out their networks much quicker than if they marketed to residential subscribers.

At the end of December 2000, there were approximately 225,000 access lines served by CLECs in Tennessee. In comparison, CLECs were providing service to 65,000 lines at the end of September 1998.

Competition in telecommunications is expanding in many ways and the players are becoming many and varied. In Tennessee, we have affiliates of power companies, telephone

cooperatives and cable television companies providing telecommunications services. This is also the scenario nationwide.

COMPETITIVE LOCAL EXCHANGE CARRIERS CURRENTLY PROVIDING "FACILITIES-BASED" LOCAL TELEPHONE SERVICE" (CLECS)

Approved

Access Integrated Networks	KMC Telecom III
Adelphia Business Solutions	LCI International
AT&T Communications	MCI Metro
Ben Lomand Communications	MCI WorldCom
Birch Telecom of the South	Navigator
BlueStar Networks	New South
Brooks Fiber	Rhythms Links
Business Telecommunications	Teligent Services
DIECA d/b/a COVAD	Time Warner
DSLnet	TriVergent
EPB of Chattanooga	US LEC
e.spire	Verizon Select
ICG Telecom	WinStar Wireless
Intermedia	XO Tennessee
ITC^DeltaCom	

Table 5

B. Telephone Cooperatives

The telephone cooperatives and independent incumbent providers have also been active in the competitive arena. In 1999, the TRA authorized Ben Lomand Communications, an affiliate of Ben Lomand Telephone Cooperative, to offer local exchange telecommunications services in Warren and White counties. This represents the first telephone cooperative to compete since competition was introduced in 1995. At the present time, Ben Lomand Communications is serving both residential and business customers as a facility-based carrier in McMinnville with plans to expand service to Sparta.

C. Power Companies

Power companies have had their own switching and control networks for years. When initially built, these copper and radio telecommunications networks provided the power companies a way to remotely monitor and meter both power grid and sub-station condition and output. As technology improved, power companies converted these networks to the latest fiber optic technology and realized that the excess bandwidth that resided on their networks was a valuable commodity that could be sold to or rented by others. Also, the introduction of competition in the telecommunications markets, coupled with the threat of restructuring of their own industry, caused many power companies to explore diversification and enter the competitive telecommunications arena on their own.

On February 2, 1999, the Electric Power Board of Chattanooga (EPB) was granted a Certificate of Public Convenience and Necessity (CCN) to provide telecommunications services in Tennessee through a separate Telecommunications Division. This CCN was the first of its kind granted by the TRA in Tennessee. Since EPB proposed to provide telecommunications services using some of the existing support infrastructure of the Electric Power Board, many facets of the operation of the Telecommunications Division and the Electric Division were examined by the TRA before granting the CCN. In addition to the financial, technical and managerial qualifications normally examined in a CCN filing, the areas of cost separation and cost allocation were also key issues examined by the TRA in the process of deliberating this application. Such issues are not normally areas of concern when

granting a CCN. However, since EPB supplies power to the citizens of Chattanooga as a municipal corporation, the TRA closely examined the safeguards that were in place to ensure that electric ratepayers do not subsidize the cost of providing telecommunications services. EPB presently provides voice, network and Internet connection services to Chattanooga's business community, including both ISDN and long distance services, over their network.

In 1999, T.C.A. § 7-52-103 was amended to allow municipalities operating an electric plant to establish a joint venture with one or more third parties to provide telecommunications services. This amendment also specified that every member of the business relationship would be subject to regulation by the TRA. Additionally, the statute requires approval by the TRA of the contract or agreement establishing the joint venture. The first application for approval of a joint venture involving a municipal power company and another party is presently being considered by the TRA. The parties in this proceeding, one of which is Memphis Light, Gas & Water, have requested authority to establish a CLEC called Memphis Networx pursuant to T.C.A. § 7-52-103. A number of parties have contested this application. As it did in the application of the Electric Power Board of Chattanooga, the TRA must determine proper safeguards to prevent cross-subsidization between MLGW's telecommunications and other utility operations. Memphis Networx intends to provide both residential and business telecommunications including high-speed data and Internet services.

D. Resellers

Resale telecommunications providers purchase an existing service from an incumbent carrier and resell that service to an end-user. At the end of December 2000, 65,000 access lines were being provided through resale. In contrast, at the end of September 1998, resellers were providing service to over 27,000 access lines in Tennessee. It is usually more cost effective for a competitive carrier to serve customers initially through the resale of the incumbent carrier's service instead of expending the capital to build facilities. This is particularly true of service for residential customers because the number of customers per mile, or access line density, encountered in serving residential customers is low compared to that of business customers. This means that much more capital outlay is required in order for

a facility-based competitive carrier to serve most residential customers. Generally, the profit margins on resold services are much less than that enjoyed by the facilities-based. Additionally, resellers are usually limited by the incumbent offerings when it comes to offering different types and choices of bundled telecommunications services, resulting in less pricing flexibility.

E. Other

The latest entry into the telecommunications market is Building Local Exchange Carriers or BLECs. BLECs partner with real estate owners and managers to secure the right to wire a building for broadband access and other services then market those services to tenants within the building. BLECs have found that while broadband capacity to a building may be readily available, in-building broadband capacity is usually not as abundant. By placing equipment in the basement of a building instead of a central office, BLECs have found they can accelerate service provisioning of high-speed data services and lower network transportation costs.

The amount of competition, especially in the market targeting commercial buildings containing small to medium sized business, requires a strong relationship between the BLEC and property management in order for the BLEC to be successful. Some BLECs even offer building management and tenants free connectivity as an enticement in exchange for building entry because they believe that future benefits will be realized through the networking of the building and services proved to tenants. The TRA has already certificated several BLECs to provide telecommunications services in Tennessee with other applications pending.

Finally, cable companies are now offering broadband Internet access through the cable television network using cable modems. This technology, when coupled with Internet Protocol (IP) telephony, are making many cable companies serious competitors in the long distance markets (a more detailed description of IP and cable modems appears in Section VIII of this report). Cable companies can now bundle television, Internet access and voice long distance together in a package that is very attractive to some users. Some of the larger traditional long distance carriers are investing heavily in cable telecommunications as a way

to protect market share. As time and technology continue to advance, Tennessee is likely to see many cable companies competing directly with the traditional carriers for a share of the telecommunications market.

IV. THE STATUS OF UNIVERSAL SERVICE

A. Telephone Penetration Rates

Telephone penetration rates, or the percent of households in a given area that receive telephone service, are a typical measure of residential universal service. County penetration rates from the 1990 Census, varied from a low of 81% in Hancock County to a high of 97% in Williamson County. The overall rate of residential telephone subscribership in Tennessee in 1990 was 93.3%, the same as the nationwide rate. Map 2 contains the 1990 telephone subscribership for all Tennessee counties.

Data from the 2000 Census is not yet available, but data from the August 2000 Current Population Survey (CPS) conducted by the Census Bureau show that Tennessee reached an overall telephone penetration rate of 95.8% in 2000, while the nationwide penetration rate increased to only 94.1%. In Tennessee's rural areas and non-metropolitan cities, this rate falls

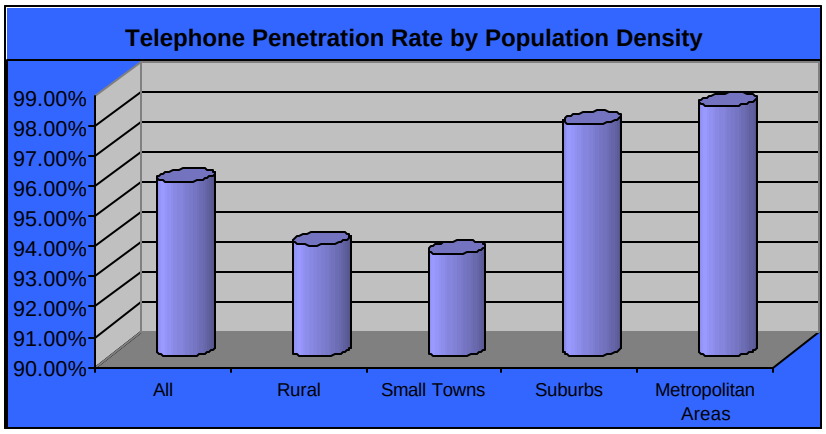


Table 6

to 93.7% and 93.4% respectively, as shown in the graph above. Suburbs show a telephone penetration rate of 97.7%, while large metropolitan areas have the highest rate of telephone subscribership at 98.3%. CPS data group all areas with populations of less than 100,000 people into the rural category, however, making it impossible to distinguish among households in very sparsely populated areas and households in rural towns.

The differences in household telephone service are more marked along income lines than along population lines, with households with annual incomes of less than $15,000 having a telephone penetration rate of only 82.1%. At the other end of the spectrum, among respondents with household incomes greater than $25,000 per year, less than one half of one percent reported having no telephone. [See Table 7]

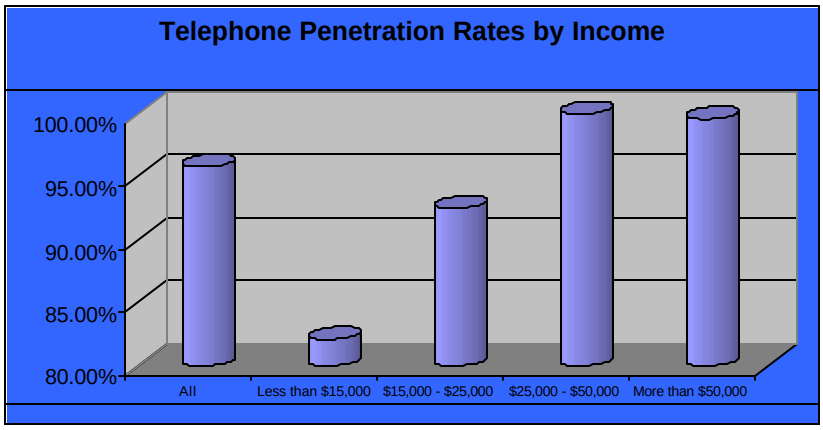


Table 7

In the last quarter of 2000, the University of Tennessee, at the request of the TRA, conducted a telephone survey of 1200 Tennessee households with school-aged children for the TRA. The following survey results apply only to households with a telephone and at least one school-aged child.

2000 Internet Access Survey	
Survey Question	**Percent "Yes"**
Do you have Internet access in your household?	62.6%
Do you access the Internet using a DSL connection?	2.6%
Do you access the Internet using a cable modem?	5.8%
As far as you know, is DSL Internet access available in your area?	34.5%
Do you have more than one phone line in your household?	39.0%
Does anyone in your household subscribe to a wireless telephone service?	67.7%
Are you aware of any providers in your area other than your current one for local telephone service?	45.7%
Is cable television service available to your home?	79.1%
Do you subscribe to cable television?	61.0%

Table 8

This survey sought to investigate the extent of the digital divide among school children, but several survey responses reflect universal service and competition concerns. For example, access to high-speed (DSL) Internet connections appears lacking in some areas of the state. Although the percentage of households aware of a choice of local telephone service provider is less than 50%, the high penetration of wireless telephony (67.6%), suggests that new technologies are competing with landline service, even if widespread competition in local residential facilities-based telecommunications services has yet to emerge.

B. Rural and Non-Rural Universal Service Proceedings

Past policies to encourage universal telephone service set lower local telephone rates in rural areas than in urban areas, even though the costs of providing the service are generally higher in rural areas. This presents a dilemma for competitive entry in rural areas, as current

prices may not yield enough revenue to cover entrants' costs. Consequently, Tennessee's 1995 Telecommunications Act provides for a special fund to subsidize residential telephone service in high cost areas at current prices (T.C.A. § 65-5-207). Although the Public Service Commission, in its Order of December 19, 1995, found that a universal service fund was not necessary at that time, the TRA opened a docket to review universal service in Tennessee on May 13, 1997.

The TRA's initial universal service proceeding deals only with BellSouth and Sprint/United Telephone-Southeast, the large "non-rural" telephone companies most susceptible to competitive entry. This proceeding is divided into three (3) phases. An Interim Order on cost issues concluded Phase I on May 20, 1998. The TRA's Interim Order on Phase II was issued on September 22, 2000, selecting a cost model and a benchmark for revenues. This set the stage for Phase III, in which the implementation of a universal service fund will be considered along with any necessary rate changes.

At the June 20, 2000, TRA Conference, the Directors voted to open a docket to consider universal service for rural areas and issued an Order to that effect on July 14, 2000. This proceeding involves fifteen (15) smaller local telephone companies for whom competitive entry has been less threatening.[6]/ The need for universal service funding and its potential implementation in the service territories of these companies will be considered here.

C. The Digital Divide

In its report entitled *"Creating the CyberSouth,"* the Southern Growth Policies Board defined the digital divide as follows:

[6] / These companies include Adamsville Telephone Co., Ardmore Telephone Co., Citizens Telephone Co. of Tennessee, Citizens Telephone Co. of the Volunteer State, Claiborne Telephone Co., Crockett Telephone Co., Humphreys Telephone Co., Loretto Telephone Co., Millington Telephone Co., Ooltewah-Collegedale Telephone Co., Peoples Telephone Co., Tellico Telephone Co., Tennessee Telephone Co., United Telephone Co., and West Tennessee Telephone Co.

> *The inability of some people to participate fully in the new Information Age in ways that ensures equality of opportunity in social, educational, political, and economic systems.*[7]

While many people tend to think of the digital divide solely in terms of Internet access, there are four major areas of concern among researchers: 1) Access to Information Technology – Does everyone have affordable, readily available access to the Internet? If it becomes necessary to participate fully, will everyone have access to a high-speed Internet connection? 2) Computer Literacy – Does everyone know how to use a computer? Does everyone know how to access the Internet? 3) Information Literacy – Does everyone know how to find information on the Internet? Can people distinguish between reliable and unreliable information? 4) Appropriate Informational Content – Can everyone find information relevant to him or her on the Internet?

In response to the Tennessee legislature's request for a pilot program to address the digital divide among Tennessee schoolchildren, the TRA commissioned a survey of Tennessee households to determine the dynamics of the digital divide problem in this state. Responses were gathered from 2,037 Tennessee students in 1,200 households during the last quarter of the 2000 calendar year. The data reveal that while Tennessee exhibits many of the same technology access gaps as the nation as a whole, there are some important differences in the nature of Tennessee's digital divide as compared to the national digital divide. One of the most notable results is that Tennessee students report a much higher rate of computer and Internet access at school than do students nationally. The graph below shows a comparison of school-based access for students nationwide in 1998 and for Tennessee students in 2000.

[7] Bohland, James, Maria Papadakis, & Richard Worrall. *Creating the CyberSouth*. Prepared for the Southern Growth Policies Board for Presentation at its Conference "TelecomSouth II: One South, Digitally Divided." September, 2000.

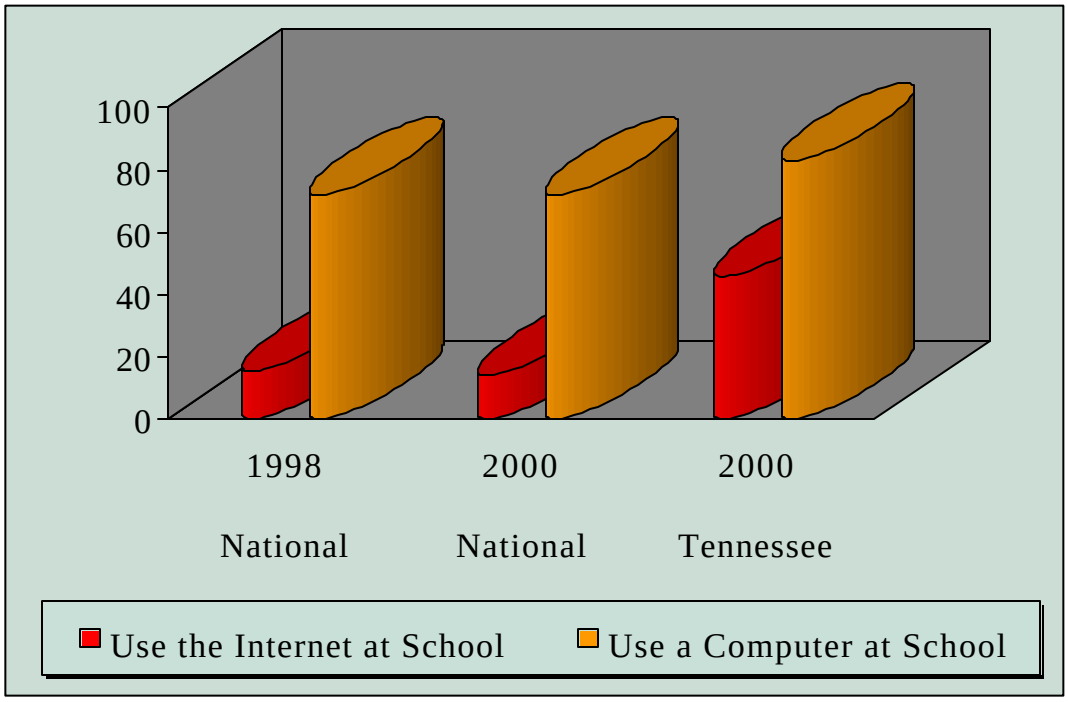


Table 9

While Tennessee's efforts to connect its schools have clearly paid off in terms of student access, there are still identifiable groups of students in Tennessee who lag behind the student population as a whole in computer and Internet access. African American students lag substantially behind other races in Tennessee in home computer ownership and home Internet access and somewhat behind other races in school computer use and school Internet access.

Students in extremely rural areas have a high rate of computer ownership, and rural farms have an equally high rate of home Internet access. Non-farm rural areas lag in home Internet access. Rural and urban areas show only small differences in school computer use and school Internet use. The gaps in home computer ownership and Internet usage among income groups are large and significant. These gaps are reduced in school computer and Internet use, but there are still differences among income groups. The education level of the head of the household is significant in home computer ownership and home Internet use (even when income is held constant), but it is not significant in school computer and Internet use.

D. Telecommunications Assistance Programs

Tennessee also has programs to help provide telephone service to low-income households and to the hearing impaired. The Lifeline and Link-up programs provide qualifying low-income households with assistance of up to $10.50 on their monthly telephone bills, as well as reduced fees on the installation of new telephone service. Telecommunication devices for the hearing impaired provide special equipment to assist the deaf or hard of hearing in making telephone calls.

(1) Link-up and Lifeline

Link-up and Lifeline Telephone Assistance Programs were established to provide access for qualifying low-income households to establish and maintain local telephone service at an affordable rate. These programs were established in Tennessee in 1989 and 1992, respectively. The FCC later mandated in 1997 that all eligible telecommunications carriers offer these programs.

Link-up provides one-half, up to a maximum of thirty dollars, credit towards the installation charge for new or transferred telephone service. Many telephone companies allow the remaining balance of the installation charge to be deferred and paid over several months.

In 1999, 4,993 subscribers established telephone service and saved a total of $99,860 on installation charges using the Link-up program. After a vigorous educational effort by the TRA in year 2000 to increase the public awareness of the availability of Link-up, as well as Lifeline, there were 4,896 individuals who utilize Link-up during that year, saving $97,920. The total number of Link-up recipients in year 1999 in comparison to the subsequent year remained fairly level despite a favorable economic climate in the state.[8] Nevertheless, because of the offering of Link-up, 4,896 low-income recipients were able to establish telephone service at a discounted rate that possibly could not afford telephone service.

[8] Decline in participation in Link-up for 1999 could be linked to the general economic condition in the state. For example, as the state's employment rate drops fewer people may qualify for Link-up.

Trend of Link-up Participation

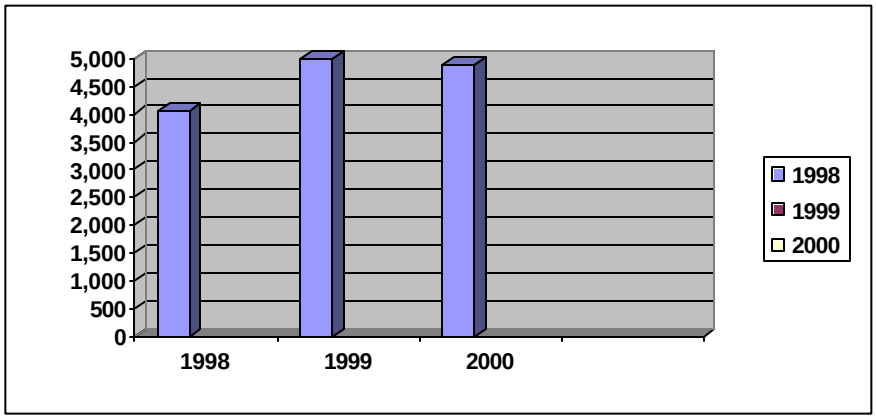


Table 10

The second telephone assistance program, Lifeline, assists low-income households to retain telephone service at an affordable rate. On July 1, 2000, Lifeline support for low-income subscribers increased to a maximum of $11.35 per month. Prior to July 1, 2000, the maximum monthly credit was $10.50. The increase is intended to offset the increase in the residential Subscriber Line Charge (SLC) that went from $3.50 to $4.25 for residential customers. The credit cannot, however, exceed the cost of the basic local charges. Therefore, depending on the cost of basic service charged by the local exchange carrier that serves the area and the type of local residential plan chosen, a person that receives Lifeline could, in fact, pay nothing for basic local telephone service.[9]

In 1998, 21,456 Lifeline recipients saved $1,351,728. From 1998 to 1999, there was a forty-five (45%) percent increase in Lifeline recipients. The increase continued in 2000 after a concentrated educational effort by the TRA to inform qualified recipients. A total of 36,701 low-income households saved $4,998,672 during the year 2000. This represents an eighteen (18%) percent increase in comparison to the previous year.

The following chart depicts the Lifeline participation from 1998 through 2000:

[9] The cost of basic, local telephone service for a Lifeline BellSouth customers who selects the residential line, measured rate service is $6.10. The SLC is $4.35. Total basic local charge for this Lifeline customer would be $10.45. Lifeline credit cannot exceed the cost of the basic, local charges. This Lifeline subscriber would not pay for local service. Basic, local service includes the SLC and residential line service but does not include charges for long distance, Emergency 911, taxes and special calling features like Caller ID, Call Waiting etc.

Trend of Lifeline Participation

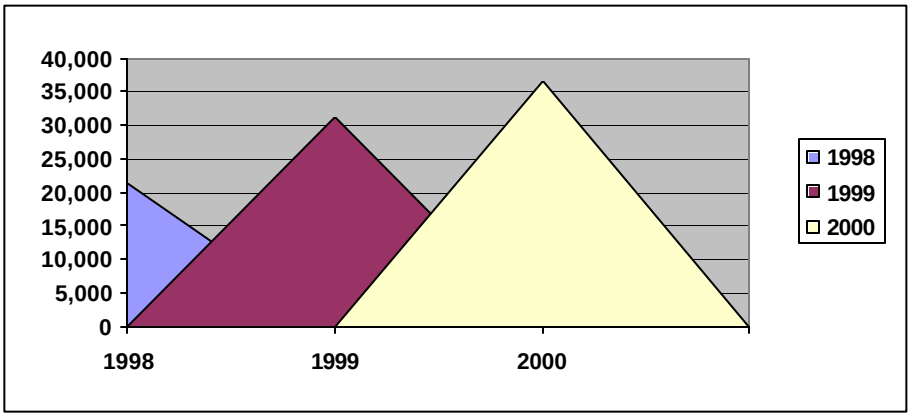


Table 11

The qualifications are the same for both programs. A person qualifies if they receive one of the following forms of public assistance: Food Stamps, Supplemental Security Income, Temporary Assistance to Needy Families or Medicaid. A person may also qualify if their income is 125% of the poverty level guidelines.

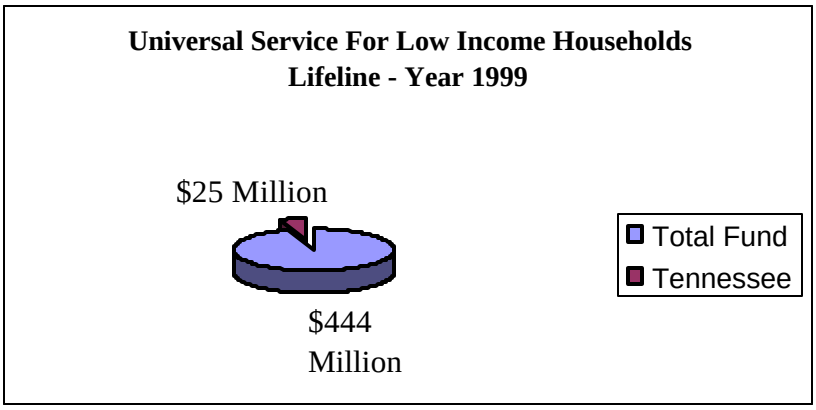


Table 12

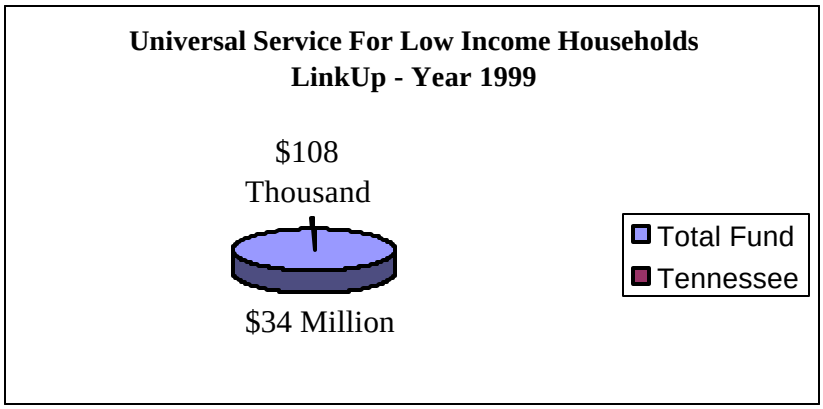


Table 13

(2) Telecommunication Devices for the Deaf

With passage of Chapter 417 of the Public Acts of 1999 ("TDAP Act"), the General Assembly established a program to assure that the deaf and hard of hearing would have access to communications devices required to use the telephone network. The TDAP Act was codified in the forth quarter of 1999, and became T.C.A.§ 65-21-115 and laid the framework for the funding and establishment of an equipment distribution program. The program was to provide the necessary assistive telecommunications devices required for persons who are deaf or hard of hearing, with or without poor vision, and persons with speech difficulties to access the telephone network. The TRA was empowered to implement the TDAP Act.

The TDAP Act stipulated that funding for an equipment distribution program would be by annual assessments from telecommunications providers that earned more than five million dollars ($5,000,000) in Tennessee specific revenue. The Act also gave the responsibility of this equipment distribution program to the TRA to implement and manage. The distribution program was named the Telecommunications Devices Access Program ("TDAP").

By the end of April of 2000, all necessary legal, financial and administrative functions necessary to put the equipment distribution program, TDAP, in place had been finalized. In February 2000, a TDAP program application was developed and distributed throughout the state. Beginning in May 2000, the first orders were submitted to the state contractors for

assertive telecommunications devices to be distributed to qualified Tennesseans TDAP equipment recipients.

The TRA has also appointed an Advisory Committee from members of Tennessee's deaf, deaf and blind, hard of hearing, language interpreter, and deaf assistance provider community. The committee was established to help ensure telecommunications equipment needs are being met, and is represented by Tennesseans from across the state.

TDAP outreach included program education and application assistance at all six Tennessee deaf centers from Memphis to Johnson City and many deaf clubs, senior citizens centers, and medical care facilities throughout the state. TRA Staff also coordinated the TDAP program information to be published in all local service provider telephone directories, directories for handicapped assistance, and with the Library Services for the Deaf and Hard of Hearing Community. Program outreach and education is a TRA Staff ongoing project and occurs statewide.

The TRA contracts, and manages that contract, for Tennessee's Telecommunications Relay Services ("TRS" or "Relay"). The Relay provides the avenue for persons that are deaf or speech impaired to access the telephone network and interface with the hearing community. This is important, not only for emergency purposes but for normal daily living in small and large communities. The average call volume for the Tennessee TRS was 65,000 calls per month. After the TDAP began issuing equipment, the monthly call volume began to increase and in October 2000 the average call volume had risen to approximately 73,000 calls per month. This is an increase of over twenty per cent (20%) and is a good indicator of the success of TDAP as an equipment distribution program.

The following charts illustrate the program status and the cost of distributed equipment, number of devices purchased, and the total number of Tennesseans served throughout the state through December 2000. In addition, Appendix 13 contains information on the Tennessee Relay Center for the deaf and hard of hearing.

Number of Devices Distributed

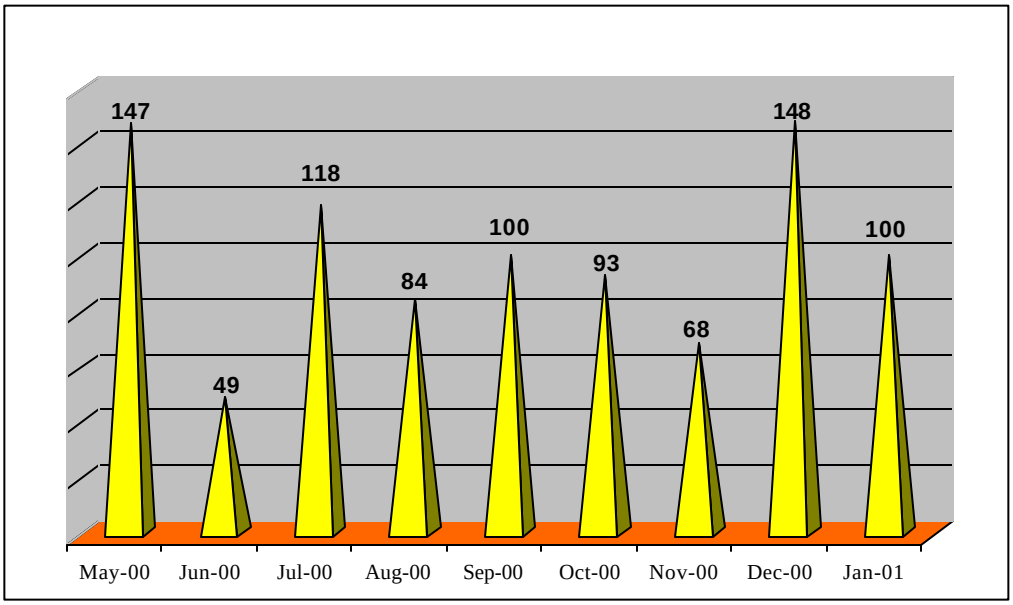


Table 14

(Note: Some Applicants require additional devices used in conjunction with the basic telecommunications device: such as, ringers, flashers, hearing aid loop coils, etc...).

TDAP
Demographics of Recipients

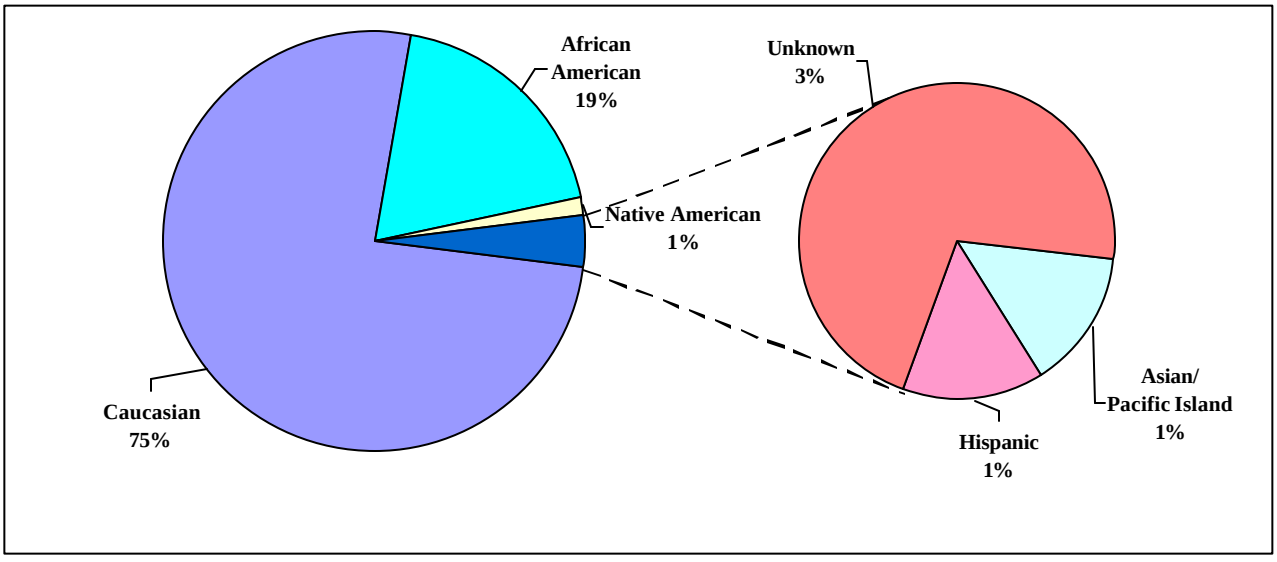


Table 15

V. TELEPHONE NUMBERING ISSUES

A. Telephone Numbering Issues: Where Did All the Telephone Numbers Go?

Not too long ago a person's telephone number was thought of as being permanent. It was pretty much a safe assumption that as long as a person remained at the same address their area code and telephone number would remain the same. This safe assumption is today no longer a sure thing. In fact, since 1995, the majority of Tennesseans have had to change the area code portion of their telephone number.

There have been basically three (3) factors that have contributed to the need to add new area codes. These factors described below are technology, usage, public policy and a legacy system of allocating numbering resources.

The 1980s and 1990s ushered a plethora of technological advances that have provided consumers with an array of new services never before contemplated. Three such advances that have affected telecommunications are wireless technology, the Internet and advanced services such as DSL. All of these advances require telephone-numbering resources and have caused a major increase in the demand for new numbers.

The second factor is telephone usage and demand for new services. Historically, families have required a single telephone line at their homes to meet their telecommunications needs. Now, it is not uncommon for homes to be equipped with multiple lines to meet voice and data needs. More telephone lines in a home translate into the need for more telephone numbers.

Public policy changes at the state and federal level have also contributed to the demand for new numbers. Telecommunications public policy has changed the number of providers of local telephone service requiring numbering resources. The new providers, in order to compete, require numbering resources. Ninety (90) new local service providers have been awarded TRA to operate in Tennessee by the TRA since 1995. While many of these new local providers have yet to begin offering service in our state, those that are operating demand numbering resources. This point brings us to the last factor that is causing an

exhaustion of our state's numbering resources, the legacy method of the allocation of numbering resources.

The present legacy method of assigning telephone numbers in prearranged blocks of 10,000 numbers is the most significant contributor to our having to add new area codes. The method of allocating telephone numbers was designed in the mid-1940s to accommodate the monopoly telecommunications environment. Numbers are assigned in blocks of 10,000 numbers regardless of the actual demand. Under this legacy system, a local provider would be given 10,000 telephone numbers even if it only needed one telephone number. This allocation method does not efficiently manage the limited resource of telephone numbers. National studies have concluded that telephone number utilization is less than 50 percent. This means that the existing numbering resources are not being used to their fullest potential. Later in this section, we will discuss the steps we have taken to address this allocation deficiency.

For local competition to exist in Tennessee, new providers must have access to telephone numbers. Inefficient use of our numbering resources causes consumer frustration and increases business costs in the state. The TRA is working to ensure that numbering resources will be available and efficiently used by all service providers. Below is a discussion on the evolution of area codes in our nation and state and a description of the number conservation steps being taken at the federal and state level. Finally, we conclude by illustrating the major events regarding telephone numbering taken by the TRA during 1999 and 2000.

B. Evolution of Area Codes

The current telephone numbering system, referred to as the North American Numbering Plan ("Plan"), was devised by AT&T in 1947. This Numbering Plan was designed to facilitate electronic calling and permit 1+ long distance calling. This Plan eliminated the need for operators to complete local and toll calls. To accomplish this objective, the Plan separated North America into certain geographic areas called the Numbering Plan Areas ("NPA") or area code. Each area code was assigned a three-digit

number. Following the area code was the telephone number prefix, referred to as the NXX or central office code. This NXX identified within the area code the precise location of the customer's telephone central office. The last four digits, referred to as the XXXX, identified the individual telephone customer. Originally, the middle digit of the area code had to be either a 0 or a 1. At the time of implementation a total of eighty-six (86) area codes were assigned out of a possible 160 three-digit codes.

By 1961 there were 104 area codes assigned under this system, demonstrating that the introduction of a new area code was a relatively rare event. By the end of 1994, there had only been an addition of fourteen (14) area codes activated making a total of 118 area codes in use for all of North America out of 160 available. Recognizing the pending exhaustion of area codes, the FCC in 1995 expanded the numbers that could be used in the middle digit in area codes to include numbers 0 through 9. This expansion of the middle digits increased the possible number of area codes in North America to 800. The assignment of new area codes stated picking up after 1995. For example, by 1998 there had been 195 area codes assigned and by October 2000 a total of 254 area codes was assigned with more than 20 codes pending implementation nationwide. The national trend in area code expansion is also reflected in our state.

National Assignment of Area Codes by Year

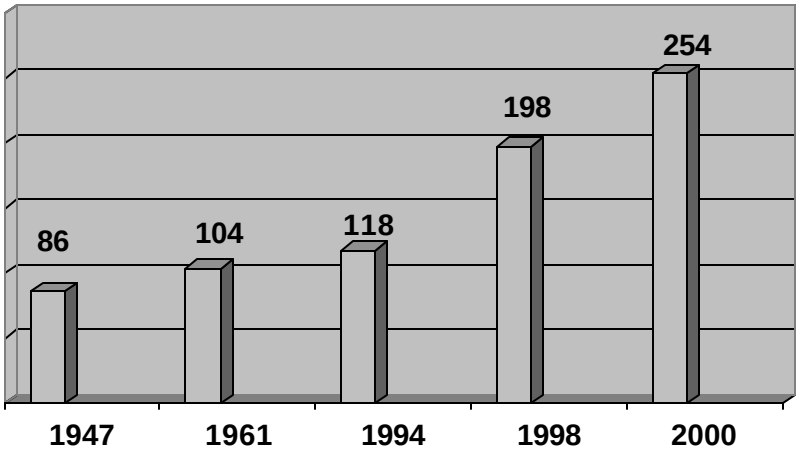


Table 16

Note: As of October 2000 there were over 20 more area codes pending implementation in 2001.

C. Tennessee Area Code Growth

In 1947, the 901 area code served the entire state of Tennessee. This remained true from 1947 until 1954 when 615 was added to serve all areas of Tennessee except West Tennessee. These dual area codes satisfied the numbering demands for our state until approximately forty (40) years later. In 1995 the 423 area code was added to serve East Tennessee. At this time, each of the state's grand divisions was served by a unique area code.

Three (3) years later, in 1998, the 615 area code of Middle Tennessee was split and the 931 area code was created. Then, just over one (1) year later the 865 area code was added to serve the Knoxville Metro Calling area. Less than one year later, the TRA was informed that the 615 area code required relief. The TRA ordered the industry to inventory their numbering resources and usage and to voluntarily return any unused central office codes. Based on some central office code returns by service providers, and a general decrease in NXX requests from service providers, the TRA suspended relief action in August 2000 in the 615 area code until further need arose.

A few months later the NANPA declared that the 901 area code needed relief. After several public meetings in West Tennessee, the TRA ordered a geographic split relief strategy. Under the geographic split, all West Tennessee except Shelby, Tipton and Fayette counties would be served by a new area code. The geographic split was ordered in August 2000 and the number of 731 was assigned by NANPA to be the additional area code for West Tennessee. Permissive dialing of the 731 area code for West Tennessee, less the Memphis Metro calling area, began on February 12, 2001.

TENNESSEE AREA CODE EXPANSION 1947-2001	
Area Code	**Year Implemented**
901	1947
615	1954
423	1995
931	1997
865	1998
731	2001

Table 17

The reason for having to add new area codes is not that we are running out of telephone numbers, but exhausting the NXX central office codes within an area code. In each area code there are approximately 800 central office codes available. Each central office code contains 10,000 individual telephone number combinations. Therefore within an area code 8,000,000 potential numbers are available for use. Central office codes exhaust much quicker than actual telephone numbers. One reason is due to the legacy method of assigning blocks of telephone numbers. As stated earlier, when a service provider wants to establish service within an area code, NANPA assigns a new central office code consisting of 10,000 potential numbers to the requesting service provider. To serve different locations in the area code, a service provider may need to request several central office codes just to serve a few customers. In most cases this leaves several thousand underutilized or stranded telephone numbers. In fact, the NANPA estimates that the nationwide utilization of telephone numbers

is between 5.7 percent and 52.6 percent, depending upon the sector.[10] This means that on the high end, about 50 percent of telephone numbers assigned to service providers are not being used. We believe that Tennessee's number utilization rates are similar to the national statistics.

Steps are being taken at both the federal and state levels to change the way telephone numbers are assigned in order to better conserve our number resources. Below is a summary of some of the most common number conservation measures.

D. Number Conservation

Number conservation refers to measures taken to prolong the life expectancy of an area code and delay the need for adding a new area code. The two most popular number conservation measures are rate center consolidation and number pooling.

- Rate centers are location-specific coordinates used by telephone companies to determine whether a telephone call is local or toll. If the call is determined to be toll, rate centers allow telephone companies to determine the mileage between the caller and the called party in order to determine the cost of the call. New service providers have to get a central office code in each rate center to serve an entire area code. For example, the 615 area code has 31 BellSouth rate centers. A new service provider would have to obtain 31 central office codes with 310,000 telephone numbers (31 x 10,000) to establish a footprint in BellSouth's 615 area code service territories. Rate center consolidation is the combining of rate centers.

- Number pooling is a change in the allocation of numbers from blocks of 10,000 to blocks of 1,000.

Under federal law, the FCC has exclusive jurisdiction over the administration of numbering in the United States. The FCC has the power to delegate numbering jurisdiction to states upon request. Delegated authority is required for states to implement pooling.

[10] Federal Communications Commission, "Notice of Proposed Rulemaking," *In the matter of Numbering*

Tennessee, like many other states, has experienced a dramatic growth in the demand on telephone numbering resources. As described above, this demand has typically been met with area code relief. Area code relief, while temporarily satisfying the need for telephone number central office codes, is not a desired solution to this ongoing problem. Area code relief is costly and disruptive to both the consumers and the service providers. Continued need for area code relief could have the effect of negatively impacting the public support for competition, as well as, depleting the national area code number resources. Since area codes and central office codes are finite numbering resources, proactive steps are needed to better utilize these resources.

In 1999 the TRA began investigating possible numbering conversation measures to further extend the life of Tennessee's area codes. At first these efforts concentrated on what the states were allowed to do by the FCC. In February, the TRA ordered the Tennessee Telecommunications Association to form an Industry Numbering Conservation Task Force for the purpose of investigating available and feasible conservation measures that may be implemented in Tennessee.

In October 1999, the TRA ordered the industry to voluntarily inventory, then return to the NANPA all unused central office codes. This action delayed the need for relief in the 615 area code but did not prolong the life of the 901 area code.

Because of the very limited authority delegated to the states over numbering, Tennessee petitioned the FCC for additional authority to implement numbering resource conservation measures. This petition was submitted on November 16, 1999, and requested state authority to implement the following:

- Enforcement of current numbering allocation standards and establishment and enforcement of new standards.

- Setting fill rates and requiring utilization surveys.

Resource Optimization, CC Docket 99-200, FCC 99-122, June 2, 1999, paragraphs 20 – 21.

- Order number utilization and forecasting reporting, and audit such reporting.

- Implementing mandatory thousands-block number pooling.

Tennessee was the second state in the Southeast to submit a petition for additional delegated authority. That petition was granted in part in July 2000 [11] and allowed Tennessee the authority to implement thousands-block number pooling in the 901 area code. Shortly thereafter, the TRA submitted an additional petition to the FCC requesting delegated authority to implement number pooling in the 615 area code.

Having been given delegated TRA by the FCC for number conservation in the 901 area code and submitting the petition for the 615 area code, the TRA ordered the implementation of thousands-block number pooling in both area codes and selected Telcordia as the Tennessee Pooling Administrator in September 2000. The first pooling implementation meeting was conducted in Tennessee on October 27, 2000.

The TRA is also exploring rate center consolidation in the 901, 615 and 865 area codes. Coupled with number pooling, rate center consolidation has the potential of slowing down the exhaustion of Tennessee's existing area codes.

The timeline below gives a visual depiction of the major numbering events and efforts that have taken place over the last two years. These events and activities may be directly attributed to the entry of new telecommunications service providers, both wireline and wireless, into Tennessee's telecommunications market.

[11] FCC DA 00-1616 Numbering Resource Optimization

Major Numbering Events and Activities for Years 1999 and 2000

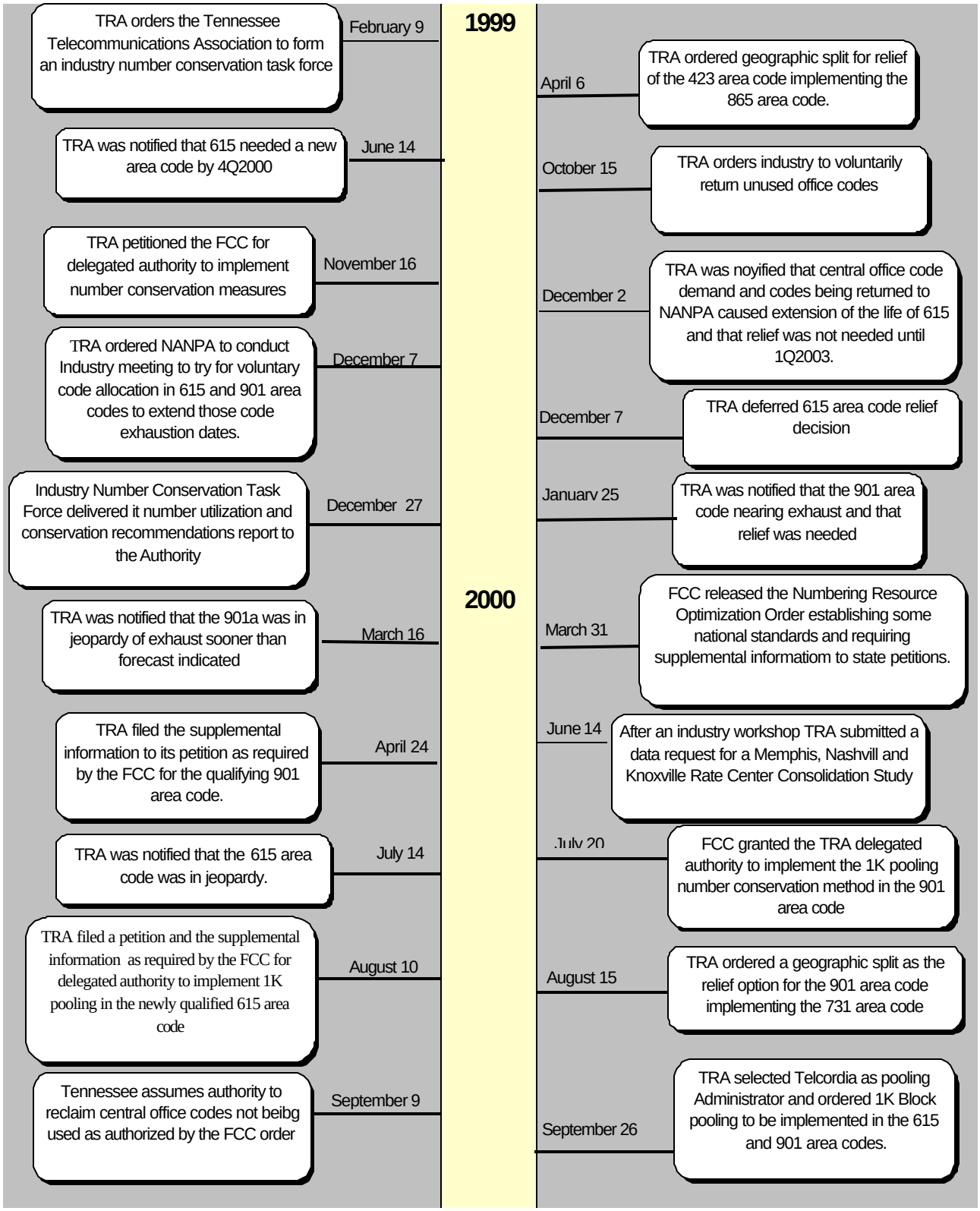


Table 18

VI. FEDERAL TELECOMMUNICATIONS INITIATIVES

A. Bell Operating Companies Entry Into Long Distance–271 Applications

The federal act allows the regional Bell Operating Companies (BOCs) to enter the interLATA long distance market once their networks are open to competing providers. Since the divestiture of AT&T and the Bell System in 1984, BellSouth and the other BOCs may only offer long distance within the LATA (local access transport area). For example, BellSouth can provide long distance service between Nashville and Cookeville (intraLATA) but not Nashville and Memphis (interLATA).

Section 271 of the federal act outlines the criteria that the BOC must meet for approval to enter the interLATA in-region long distance market. The conditions include the provision of nondiscriminatory access the BOC Operating Support Systems (OSS). It must provide access to competitors at the same level that it provides those services to itself. Normally, the ability of the company to provide OSS would be measured by actual performance. The FCC, however, has recognized that the results of third party testing may be used to demonstrate that the OSS is commercially ready. Third party testing is a popular approach to testing OSS because it has the potential to eliminate the "finger pointing" between BOCs and the CLECs that typically occurs when evaluating actual data. Additionally, with third party testing, the tester acts as the CLEC, thus removing CLEC error from the equation.

To date, no BellSouth 271 application has been approved nor does BellSouth presently have a 271 application pending in Tennessee. In 1997, BellSouth notified the Authority that it intended to file a 271 application with the FCC. The TRA proceeded with evidentiary hearings to determine BellSouth's compliance with the federal act. The evidentiary record included more than 40,000 pages of documentation. Before the Authority could deliberate on BellSouth's compliance, BellSouth voluntarily withdrew the notice of its intent to file and no decision was ever rendered.

OSS testing is underway in the BellSouth states of Georgia and Florida. BellSouth is employing the consultant firm KPMG in Georgia, and the Florida PSC is employing KPMG

to perform its third party testing. The Florida tests include broadband elements and high volume testing, and Florida includes significantly more CLEC participation than does the testing in Georgia.

The FCC has approved applications under Section 271 by Verizon for New York (December 21, 1999) and by SBC for Texas (June 30, 2000), Kansas and Oklahoma (January 22, 2001). The FCC has rejected applications for Michigan, South Carolina and Louisiana (twice). Each of the approved applications has employed a distinct approach to OSS third party testing. The New York commission approved the creation of a virtual CLEC and used it to determine that the company was providing sufficient OSS resources to wholesalers. Nevertheless, immediately after its approval, Verizon's order processing software failed. Verizon resolved the problem after the New York commission reallocated bill credits within the performance assurance plan and added a special provision to the plan supported by $24 million in additional bill credits. At the same time, Verizon entered into a consent decree with the FCC, which contained a $3 million voluntary contribution to the United States Treasury.

The Texas commission's review of SBC consisted of two parts. The first part assessed the functional capabilities of the OSS. It required SBC to demonstrate that it can provide pre-ordering, ordering, provisioning, billing, and maintenance and repair through its current OSS. The second part examined the robustness of SBC's computer systems. It required SBC to demonstrate that its computer systems could handle the expected customer requests for order and pre-order information, estimated at first quarter 2000 levels.

The FCC approved SBC's application for Section 271 approval covering the states of Kansas, and Oklahoma on January 22, 2001. This represents the first time a single BOC has gained FCC approval in more than one state within its service territory, and it also represents the first time that an approval has relied on testing performed in another state. The FCC concluded that SBC's OSS serving Texas was substantially the same as that serving Kansas and Oklahoma. Map 5 depicts the Section 271 approvals and OSS testing throughout the nation.

B. Advanced Services

Section 706 of the federal telecommunications act defines advanced telecommunications capability as "high-speed, switched, broadband telecommunications capability that enables users to originate and receive high-quality voice, data, graphics and video telecommunications using any technology." The FCC and State Regulatory Commissions are directed to encourage the deployment of advanced telecommunication services throughout each state on a reasonable and timely basis consistent with the federal telecommunications act. Further, the FCC is to conduct regular inquiries to determine whether advanced services are available to all Americans. Should such inquiries determine that the directives of the federal act are not being met, the FCC is to take immediate action to accelerate deployment.

The FCC's stated goal is to encourage investment in new technologies in the network in order to stimulate competition among advanced services. Recognizing the challenges in achieving this goal, the FCC inquired and issued two reports concentrating on the technical aspect of the network, its capability of providing advanced services, and the regulatory treatment of different technologies. The first report issued in February 1999 concluded that deployment of advanced services was in the early stage of deployment and at this time was considered reasonable. The second report issued in August 2000 included an expansive approach to data collection and focused on the three specific areas of subscribership, investment in infrastructure and projections of future growth and the choices available to consumers with regard to service providers and technology.

Based upon its findings, the FCC determined that there is reasonable deployment of the backbone facilities and the last 100 feet ("last mile") within the nation. The report specifies that advanced telecommunications increased 57% from 1999 to 2000 with 4.3 million lines in service at the end of 2000. The report also recognizes that while the overall deployment of advanced services is reasonable and timely, there is susceptibility to low-income consumers, those living in sparsely populated areas, minority consumers, Native

Americans, persons with disabilities and those living in the U.S. territories of not receiving access to advanced services.

In accordance with its statutory mandate the FCC outlined a specific plan aimed at promoting access to advanced services especially to those Americans noted above as vulnerable to not having access to these services. This plan calls for, among other things, modifications to collocation requirements, consideration of providing access to cable companies' infrastructure by multiple Internet service providers, consideration of advanced service capability within the rural high-cost proceeding and licensed and unlicensed spectrum capability. The FCC also strongly encourages actions that will increase investment in, stimulate the demand for and reduce the cost of advanced services.

C. Assistance Programs Administered Through the Federal Universal Service Fund

(1) Schools and Libraries

The Federal Schools and Libraries Fund provides up to $2.25 billion annually in the form of discounts (also known as "E-rate") to ensure that all eligible schools and libraries have affordable access to modern telecommunications and information services. The level of discount is based on the percentage of students eligible for the National School Lunch program, and whether the school building is located in an urban or a rural area. Between July 1, 1999 and June 30, 2000, $2.0 billion had been committed nationally. Tennessee's share was $61.6 million, or three percent.

(2) Rural Health Care

The Federal Universal Service Fund also provides reduced rates to rural health care providers for telecommunications services related to the provision of health care. The program is designed to ensure that rural health care providers pay no more than their urban counterparts for these technologies. Between July 1, 1999 and June 30, 2000, $5.4 million had been committed nationally. No funds were committed during this period for Tennessee.

(3) Low Income

In 1984, the FCC, together with states and local telephone companies, established a federal Lifeline program to promote universal service by helping low income individuals afford the cost of telephone service. In 1987, the FCC adopted Link-up America, which helps low income households pay for connection and installation of telephone service. As of the end of 1999, 30,264 Tennesseeans benefited from Lifeline, and 6,064 received help from Link-up. During 1999, $2.5 million (out of $444 million nationwide) was paid to Tennessee for Lifeline support, and $108 thousand (out of $34 million nationwide) was paid to Tennessee for Link-up. Tennesseans represent about one-half of one percent of Lifeline subscribers and less than one-third of one percent of all Link-up subscribers. More information on these programs is found in Chapter III.

(4) High Cost

The high-cost portion of the Federal Universal Service Fund enables areas with very high costs to recover some of these costs from the Universal Service support mechanisms, leaving a smaller remainder of the costs to be recovered through end-user rates. This mechanism is intended to hold down rates and thereby further the advancement of universal telephone service. During the year 2000, Tennessee received $34.4 million in high cost support, compared to $2.2 billion nationally. Tennessee's share of the national high cost support is about one and one-half percent.

(5) Coalition for Affordable Local and Long Distance Service (CALLS)

CALLS is composed of AT&T, Verizon (formerly Bell Atlantic and GTE), BellSouth, SBC and Sprint. They represent four of the five largest local exchange companies (LECs) and two of the three largest long distance companies in the nation. The CALLS proposal contains three independent parts, which were aimed at overhauling the complex system of hidden subsidies existing in the traditional rate structure for access charges. To accomplish the objective of making these implicit subsidies explicit, while maintaining revenue neutrality

for the ILECs, the FCC adopted the *CALLS Order* on May 31, 2000, which includes the following:

The CALLS Order eliminated the Presubscribed Interexchange Carrier Charge (PICC), which IXCs have passed on to residential and single-line business consumers bills. The PICC was capped at $1.04 before the FCC's Order and was scheduled to increase by $0.52 per line on July 1, 2000.

The Subscriber Line Charge (SLC) for residential and single-line businesses had been capped at $3.50 per line. The CALLS Order combined the PICC and the SLC into a new SLC that is capped at $4.35 per line beginning July 1, 2000 until July 1, 2001. Thus, most single-line consumers will save more than $0.70 per line under the CALLS Order. On July 1, 2001, the SLC will increase to $5.00 until July 1, 2002, at which time the FCC will conduct cost studies to determine the need for further increases.

The Order established a $650 million fund to provide federal universal service support to the ILECs. This support is targeted to the density zones that have the greatest need for it, in a competitively neutral basis to any eligible telecommunications carrier serving a customer supported by this fund.

The Universal Service Administrative Company (USAC) administers this new fund along with the support mechanisms for High Cost, Low Income, Schools and Libraries and Rural Health Care.

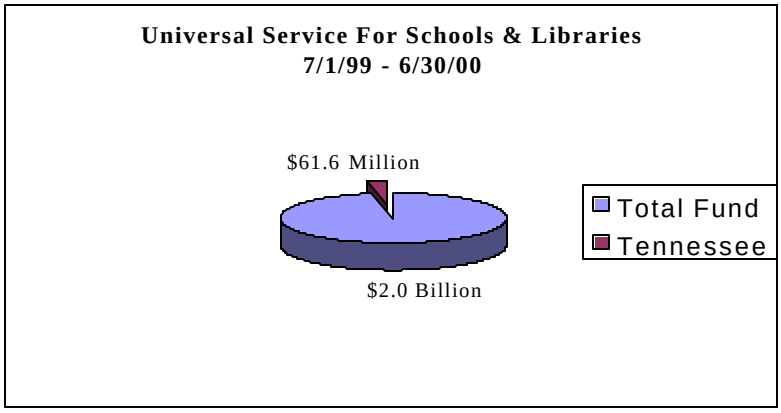


Table 19

VII. TECHNOLOGICAL CHANGE IN THE MARKETPLACE

The stated purpose of the 1996 Federal Telecommunications Act is "to promote competition and reduce regulation in order to secure lower prices and higher quality services for American telecommunications consumers and encourage the rapid deployment of new telecommunications technologies." Below is a discussion of the new technologies impacting the telecommunications marketplace:

Broadband Services – DSL and Cable Modems

The demand for portable telecommunications as well as faster data transmission has spurred major technological innovation in telecommunications markets. New technologies for wireless and "broadband" services as well technologies that combine both are being developed at a rapid pace. The term "broadband" is generally used to convey sufficient capacity or "bandwidth" to transport large amounts of information. As technology continues to evolve, the concept of broadband is evolving with it. What is considered broadband today will most assuredly be narrowband when tomorrow's technologies appear. Below is an overview of some of today's new telecommunications technologies.

DSL is a technology that provides high bandwidth and fast data transmission speeds to homes and small businesses over ordinary copper lines. DSL provides a constant "always on" connection so that subscribers have access to the Internet and e-mail 24 hours a day, seven days a week. With DSL there is no need to dial into your Internet Service Provider (ISP) each time you want to get on-line. A DSL line can carry both data and voice and can transmit data up to 50 times faster than standard dial up modems. For example, suppose that someone e-mails you a picture of your kids. Using a traditional dial up modem it can take up to 10 minutes to download that picture. In many cases, the same picture can be downloaded using DSL technology in as little as 12 seconds. The Bell Operating companies are the largest DSL providers in the country; however, many competitive carriers are also actively marketing DSL. BellSouth recently announced that they have signed up more than 200,000 subscribers to its DSL service in its region. Because DSL is constrained by distance, it may not be

available in areas where subscribers located farther than 18,000 feet from the telephone company central office.

Although DSL service is basically a broadband technology, it is typically provided over traditional copper facilities that still make up a large portion of the existing local loop network. Because DSL was developed for use in the existing local environment, and because DSL utilizes a portion of the local loop called the high frequency portion of the loop, DSL can be deployed on the same copper facility at the same time that facility is being used to provide voice communications. In recognition of this, the FCC has issued an order in that allows a CLEC to provide DSL to an incumbent's voice customer utilizing the incumbent's copper facility. This technique is called "line sharing." The two services do not interfere with each other because they electrically utilize different portions of the copper loop. With line sharing, a telephone subscriber can be talking to a party using normal voice communications while downloading data to his computer at the same time. The beauty of line sharing is that it minimizes the CLEC's investment in infrastructure while allowing the CLEC to compete head to head with the incumbent in the broadband market. Thus, line sharing should foster more competition in residential markets. In December 2000, the TRA established interim line sharing rates in order to allow CLECs to provide DSL to Tennessee consumers through line sharing agreements with BellSouth and Sprint/United. To date, however, line sharing between incumbents and CLECs has spread at disappointingly slow rates. For example, as of May 2001, BellSouth was sharing less than 300 of its lines with CLECs.

Traditional dial-up modems, internal to most PCs, provide Internet access through the public switched telephone network (PSTN). Such connections typically take place at data speeds of up to 56kbps (56,000 bits per second). A cable modem, provide by cable television companies, can give users high speed Internet access through the cable network at more than 1mbps (1 million bits per second), or about 20 times faster. Carriers like AT&T have purchased a number of major cable companies and are investing heavily in cable telecommunications. Cox cable and even AOL, as a result of its merger with Time Warner, are also expected to become major players in the cable broadband market. As technology provides new advances in Internet telephony, the stage is being set for cable television

companies to bundle both Internet access along with traditional telephony to end users in Tennessee.

Both DSL and cable modems have pros and cons. Presently, cable Internet networks are like party lines. The more traffic, or the more of your neighbors using the service, the slower Internet access becomes. Although many users don't really notice much of a slowdown, the connection speed does vary as more people get on line. Additionally, with this technology, choices are limited to your local cable provider. Depending upon the subscriber's distance from the local telephone switching office, DSL may not be available. Additionally, inside wiring that will work fine with traditional voice telephony, may not work with DSL.

Internet Telephony

One of the most controversial technologies in the regulatory realm is Internet telephony. Internet telephony refers to communications services, voice facsimile and/or voice messaging applications that are transported over the Internet, rather than the PSTN. This technology is controversial because the calls are being originated by Internet service providers and not the traditional telecommunications providers. The basic steps involved in originating an Internet telephone call are the conversion of the analog voice signal to a digital format and the translation of the resulting signal into Internet protocol (IP). The process is reversed at the receiving end. IP depends upon bundles or "packets" of data and "packet switching" in order to accomplish this. Each information-carrying packet contains its own coded originating address (address of the sender) and coded terminating address (address of the recipient). This allows the packet network to deliver each packet to its proper destination. Each packet is electronically superimposed on the packet switched network with the data containing packets of other users. The individual packets of each signal can even travel over separate network paths for reassembly in the proper sequence at their ultimate destination into the original message. This allows more efficient use of the network, through sharing of switching resources, than the circuit switched PSTN which dedicates a single facility and routes a call over a single path for the duration of a call. Using IP telephony, unregulated ISPs are now competing directly with the traditionally regulated telecommunications carriers

in the voice telecommunications arena. Innovative software developments now allow voice communications to be completed via the Internet thus bypassing the long distance network. Although this technology is still in the infant stages, it is estimated that as much as 25% of the international calls are being made toll free over the Internet.

Wireless Broadband

Technology is also allowing the Internet to migrate out of the PC. Third generation Wireless, and non-pc Internet appliances allow you to send and receive e-mail, or access the Internet at broadband speeds without a PC using a mobile wireless phone. Imagine a mobile phone that displays your bank statement, shows you what you just purchased from an online store, provides an immediate e-mail confirmation of your latest stock transaction, lets you check traffic conditions and monitor the weather.

Third-generation cellular (3G) is a new radio communications technology that will provide high-speed access to many Internet based services. 3G will turn a cell phone into an Internet terminal, with a permanent Internet connection, and a video monitor as well. 3G will perform all its functions at extremely high speeds (up to a tenfold increase in speed). These new devices will be online all the time and a user won't always need to "dial up" to retrieve e-mail and other data. In the 3G environments, incoming data will be simply downloaded to your cellular phone as soon as it is sent or requested. 3G will also change the way people pay for their service. With 3G you will be charged for information volumes rather than time connected. 3G networks will employ the same "packet switching" techniques discussed above. 3G technology packs many functions into a single device, and is likely to become a viable competitor to the more traditional forms of voice and data communications. Although we are seeing some limited applications of third generation wireless, most experts suggest that we have only scratched the surface this new technology.

Manufacturers of both communications and computer equipment have rallied around another wireless standard called Bluetooth. Bluetooth is the name given to a new technology that uses short-range radio links to replace the cable connecting portable and/or fixed electronic devices. Bluetooth enabled electronic devices connect and communicate wirelessly

via short-range radio networks called "piconets." These piconets do not have to remain stationary but can move with the user. This technology offers wireless access to local area networks (LANs), the PSTN, the mobile phone network, the Internet and various home appliances and portable hand held "palm top" computers. Additional applications might include wireless computer printer and or computer mouse or headset connections. This technology will permit high-speed communication among devices within any 10-meter area occupied by users. It is expected to usher in the era of the portable "personal area network" or PAN. Once computers, wireless phones, pagers, and hand held devices can talk to one another, each can be used to operate the other. An example is highlighting the phone list on your palm pilot, which then makes a call through your digital phone. It also means that people could carry modules of different parts of different devices around, in many different shapes and sizes. People walking around in their "Bluetooth bubble" would have no need for a traditional handset. All major wireless carriers are talking about Bluetooth, but there hasn't been a huge commitment yet. The carriers face many challenges such as increasing the reliability of their networks.

Wireless Telemetry

Wireless monitoring, also known as telemetry, is beginning to make its own dent in the cordless future. The technology's best-known applications are monitoring utility meters, parking meters, and vending machines. In the more distant future, wireless telemetry will play a far more ubiquitous role, collecting, transmitting and analyzing data on everything from sound levels to radiation to blood flow. What makes telemetry so enticing is the technology's low profile, low price tag, and low reach, aided by the growth of computing power and the Internet's massive retrieval capability. Telemetry units may generate as much individual revenue as wireless voice or paging units. Wireless makes the connection between the computing device and the Internet. Wireless networks are more expensive than wired systems in terms of airtime, but because they don't require someone to go to a site, dig up the street and run wire, the overall cost is much less and their range is more extensive. Probably the most likely mass market for wireless telemetry is the home, from security systems to smart appliances. There is a whole movement now to make devices communication-enabled.

Satellite Telecommunications

Early on satellite technology was viewed as the most promising competitive alternative to traditional landline telecommunications networks. Satellite-communications projects soon became too expensive, took too long to put in place, and attracted too small a market to make money. These expensive unreliable systems were sold at bargain prices on the auction block. New technology has emerged, upgrading these antiques, permitting phone calls and relatively slow data transmission. Providers will be able to offer cheaper per-minute rates and more versatile phones that work with terrestrial cellular networks. The design of the new systems makes it easier to change features, such as data transmission speeds, from the ground. These competitive access providers are targeting different markets, such as remote industrial sites, ships, mines, and oil wells. These new satellites are expected to have a 10 to 12 year life cycle. No providers of satellite telecommunications are operating in Tennessee at this time.

VIII. THE TECHNICAL COMPATIBILITY BETWEEN PROVIDERS

For multiple providers of telecommunications services to compete, it is imperative that their networks be compatible so that customers of different providers may call each other. Furthermore, both state and federal telecommunications acts require that all telecommunication services providers make their facilities available for interconnection to all providers. These Acts require that the carriers negotiate agreements to interconnect their facilities in good faith, with rates, terms, and conditions that are just, reasonable, and nondiscriminatory. If disputes between the parties arise during said negotiations, either party may petition the TRA to arbitrate the contested issues. As of December 31, 2000, the TRA has approved in excess of 200 interconnection agreements, including amendments, between competing carriers, eight (8) of which were arbitrated by the TRA. There are currently six (6) arbitrations pending before the TRA. A discussion of the more frequent and complex issues presented to the TRA for arbitration are presented below:

(1) Unbundled Network Elements

Unbundled network elements are those facilities, features, functions and equipment purchased by Competing Local Exchange Carriers ("CLECs") from the Incumbent Local Exchange Carrier ("incumbent provider") to provision telecommunications services to their customers. Often, CLECs combine purchased unbundled elements with their own facilities to form complete services. In other instances, CLECs provision services to its customers exclusively from elements purchased from the incumbent provider. These elements include the local loop provided from a central office to the customer premise and features/functions like custom calling features. Incumbents must also provide nondiscriminatory access to unbundled network elements known as operation support systems (OSS); these systems are discussed in (2) below in more detail.

Furthermore, the incumbent provider is required to provide unbundled network elements to CLECs under nondiscriminatory terms, rates and conditions. As required by the federal act, the TRA has established nondiscriminatory rates for unbundled network elements after conducting extensive hearings to determine the appropriate cost of network elements.

The TRA also determines, in the absence of negotiated terms, nondiscriminatory terms and conditions under which parties interconnect.

(2) Operational Support Systems

Operational Support Systems (OSS) provides support for pre-ordering, ordering, provisioning, repair and maintenance and billing. In years past, BellSouth developed integrated systems that automatically provided all information necessary to establish and maintain a customer's telephone service. More specifically, these systems assign telephone numbers, details the types of telephone service/features available in a central office, calculate the date when service can be established, create customer billing records, establish schedules for service maintenance and repairs... Per FCC rules, incumbent carriers are required to provide nondiscriminatory access to its OSS. Inasmuch, the FCC has found that nondiscriminatory access to OSS is a prerequisite to the development of meaningful local competition and that without such nondiscriminatory access, CLECs will be severely disadvantaged, if not precluded, from effectively competing in the local exchange market.

In order to ensure that nondiscriminatory access to OSS is provided by incumbent providers consistent with the federal and state acts, the TRA has established proceedings to determine an appropriate set of performance measurements that will accurately reflect the quality of access to OSS. Furthermore, the TRA is examining the application of enforcement mechanisms when the level of performance becomes inadequate, i.e., below an established, acceptable standard of performance. Finally, the TRA is considering whether to require independent third party testing of the incumbent provider's OSS systems.

(3) Collocation

The ability of a CLEC to collocate its equipment in the central offices of the incumbent provider, as opposed to constructing off-site facilities, is extremely important in establishing cost parity between new entrants and incumbent providers. Pursuant to the federal act, it is the duty of the incumbent provider to make space available in its central offices for CLEC equipment. While the FCC mandates that collocation be provided on a

nondiscriminatory basis, and provides some general guidelines as to developing acceptable standards, state commissions must establish the terms and rates under which collocation must be provided through approval of negotiated interconnection agreements or through arbitration proceedings. Specific issues relevant to collocation include available space within the incumbent provider buildings, building security, cost elements, provisioning intervals, access to entrance facilities, delineation of demarcation points, vendor certification requirements, and terms and conditions of maintenance agreements. In some instances, the TRA has conducted on-site inspections of central offices to determine the availability of collocation space for requesting carriers.

(4) Reciprocal Compensation

Reciprocal compensation is the method by which carriers, incumbent and competing, reimburse each other for utilizing a portion of another carrier's network for transporting and terminating local telephone calls. Pursuant to the federal telecommunications act, the TRA is charged with establishing the rates, terms, and conditions for reciprocal compensation among carriers. The amount/rate of reciprocal compensation may be negotiated between carriers, or may be established by the TRA in an arbitration proceeding. One of the most prominent issues relating to reciprocal compensation is the determination as to whether telephone calls that connect consumers to the Internet should be subject to reciprocal compensation arrangements. Competing carriers argue that such calls are local in nature and therefore they should be compensated for local traffic that originates on another carriers network, but terminates on its network. Incumbent carriers generally argue that such Internet-bound calls are inherently interstate in nature since the call does not end at the Internet service provider's location, but instead may terminate in another state or country. Accordingly, the incumbent providers do not believe that they should be required to pay reciprocal compensation on Internet-bound calls since the federal act requires reciprocal compensation on local calls only. The issue of classifying Internet-bound calls, however, is currently pending before the FCC.

IX. SERVICE PERFORMANCE OF TELECOMMUNICATIONS PROVIDERS

A. Quality of Service

Service performance of telecommunications providers is a critical component for effective and efficient telecommunications. In recognizing the need to review this important component, the General Assembly exhibited its intent to ensure that the road to telecommunications local competition not produce the unintended consequences of deterioration in the level of telecommunications service. In fact, the General Assembly addressed this possibility directly in another statute. T.C.A. § 65-5-208(1) requires incumbent telephone companies that apply for price regulation to continue to provide, at a minimum, the level of service quality as existed on June 6, 1995. BellSouth, United Telephone Southeast and Citizens have elected to go under price regulation. As set by statute, the standard used to evaluate the quality of services in this report will be the level of quality that existed on June 6, 1995.

This section will review the quality of service provided by telecommunications service providers in Tennessee during the two-year period of 1999-2000. The TRA continuously monitors the service of all regulated telecommunications service providers. Particular focus in this report, however, will be given to those three (3) telephone companies that have elected price regulation. It is also within the territories of these three (3) telephone companies that local competition is authorized. Our targeted analysis will provide insight on how the threat of competition has affected the quality of service provided by price-regulated telephone companies and what the TRA is doing to ensure the intent of the General Assembly is achieved.

Finally, a review of telecommunications competition would not be complete with a brief review of slamming, the most serious consumer abuse created as a result of competition in the long distance market. Slamming is the unauthorized switching of a consumer's preferred telecommunications provider. Over the past several sessions, the General Assembly has recognized this form of consumer abuse and passed legislation designed to address this

problem. This section will briefly review the status of slamming complaints over the past two years and what steps the TRA has taken to vigorously enforce state law on this subject.

Method of Analysis

The quality of service performance of the three (3) local telephone companies where local competition is allowed under state law will form the basis of our analysis of service quality. The services of each of the three (3) companies: BellSouth, Citizens and Sprint/United Telephone Southeast will be analyzed using three basic measurements. First, a macro analysis of each company's trend in consumer complaints investigated by the TRA will be reviewed. This analysis will focus on the trend from 1995 to 2000. The starting year of 1995 was selected because these companies are under a legislative mandate to provide the services at the same level of quality as existed on June 5, 1995.

Additional macro analysis will be conducted by comparing the number of consumer generated trouble reports per 100 access lines for 1995 and 2000 as reported directly to the telephone companies from their customers. This statistical data was calculated from information routinely provided to the TRA by the three (3) companies. This percentage will also allow for cross-company comparisons between the three (3) price-regulated telephone companies of the level of trouble as reported by its subscribers.

The last measurement is a comparative analysis of the types of consumer complaints investigated by the TRA each telephone company received in 1995 and 2000. This review will allow the reader to see whether improvement or decay has occurred by a particular complaint category by each telephone company. The main complaint categories identified are quality of service problems, billing disputes, delayed installation of service and miscellaneous.

BellSouth

BellSouth is by far the largest telephone company in the state serving approximately 2.7 million telephone lines in both rural and urban centers. As illustrated on the graphs below, BellSouth's average number of TRA investigated consumer complaints since 1995 is

796. However, customers have filed more complaints with the TRA against BellSouth having to do with quality of service and delays in obtaining new service than during 1995. Both the number of service and delayed new installation complaints during 2000 increased by 49 percent since 1995. Also increased since 1995 is the overall number of BellSouth customer generated trouble reports per 100 access lines. In fact, an increase in the number of trouble reports in the range of 42 percent to 58 percent was experienced in each of the exchange size categories since 1995 service levels.

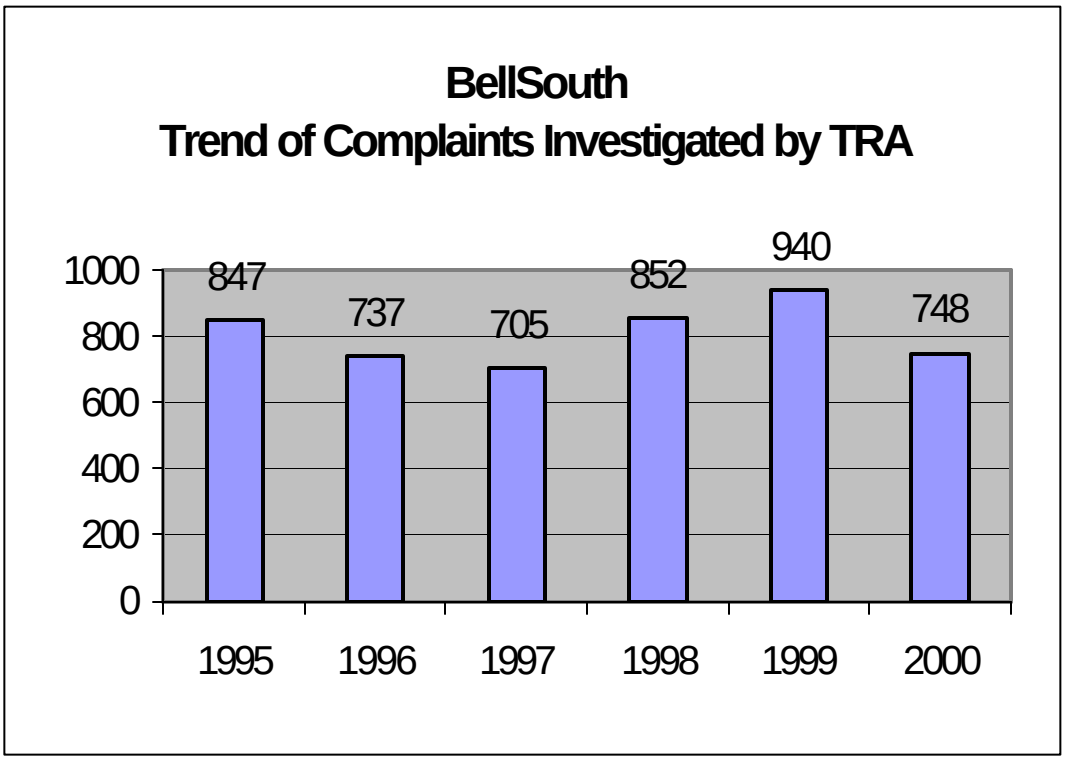
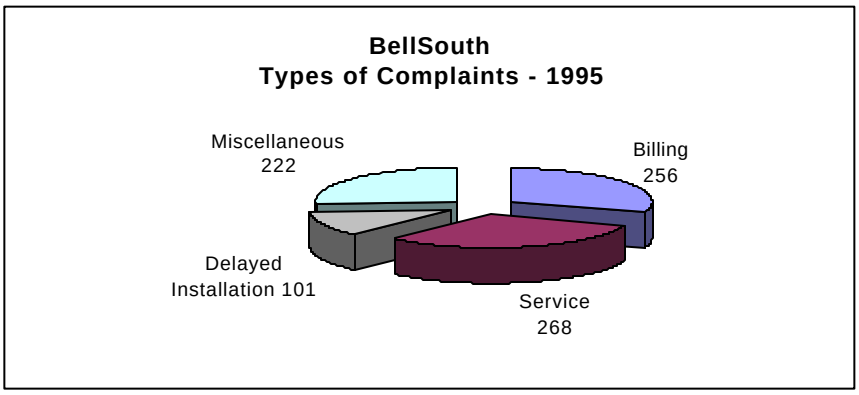


Table 20



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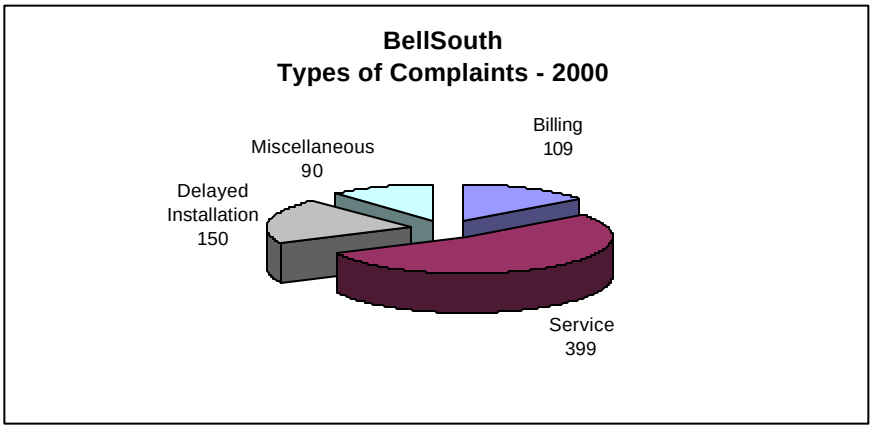


Table 22

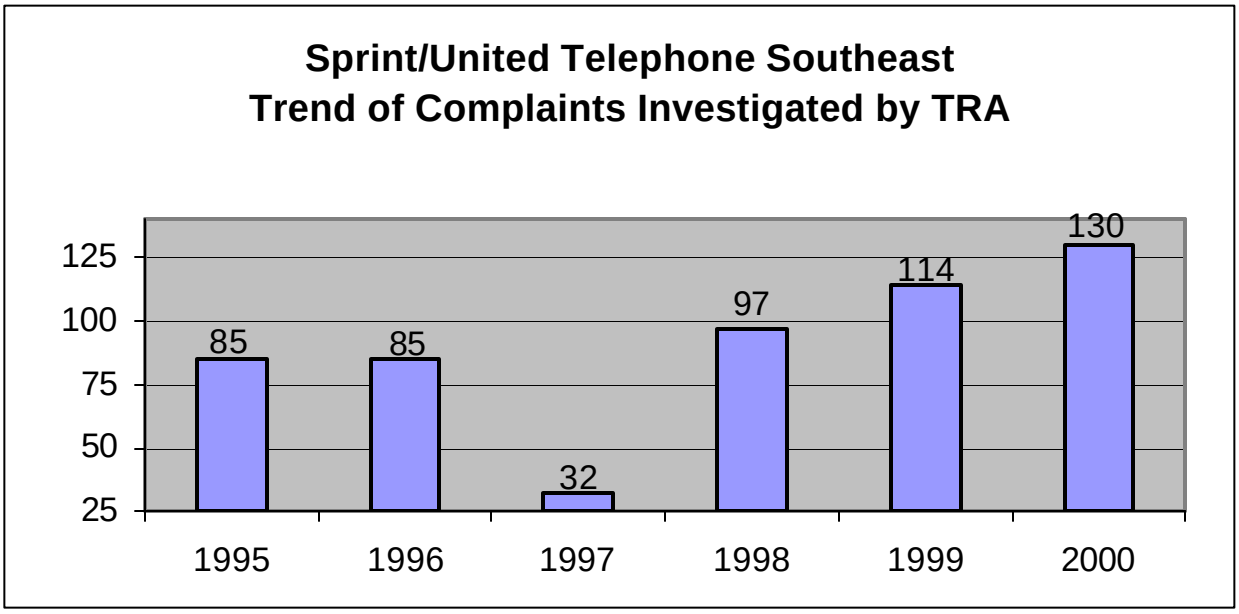
BELLSOUTH
TROUBLE REPORTS PER 100 ACCESS LINES
1995 AND 1999

BellSouth Exchange Size	1995 Avg. Trouble Reports	1999 Avg. Trouble Reports	Percentage Difference
< 3000 access lines	4.4	6.5	+ 48%
Between 3000-14,000 access lines	2.4	3.4	+ 42%
> 14,000 access lines	2.4	3.8	+ 58%

Table 23

Sprint/United Telephone Southeast Service Performance

Sprint/United Telephone Southeast ("Sprint") is the second largest local telephone provider in the state serving approximately 259,000 access lines in Northeast Tennessee. As illustrated in the charts below, consumer complaints against Sprint investigated by the TRA have increased from 85 in 1995 to 130 in 2000. The yearly average number of complaints since 1995 against Sprint is 92. The largest increases in complaints were registered in the service and delayed installation complaint categories. Year 2000 service complaints registered against Sprint with the TRA increased 155 percent since 1995. However, a more careful analysis reveals that Sprint's trouble per 100 access lines is the lowest of the three (3) largest telephone companies in the state.



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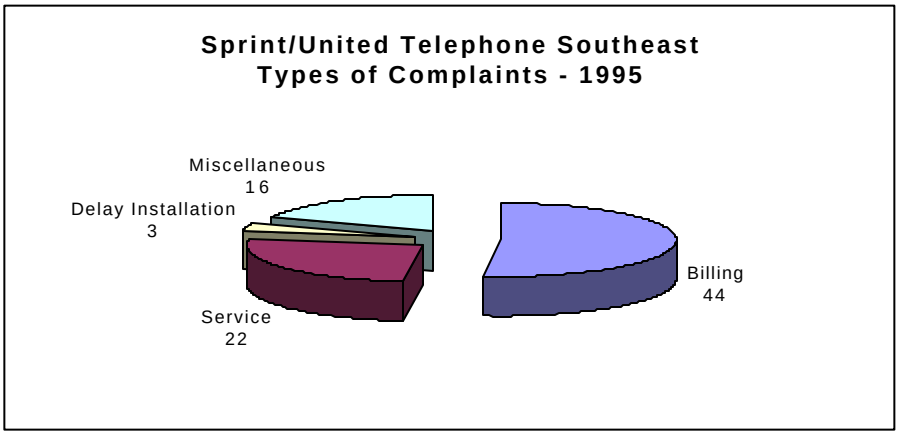

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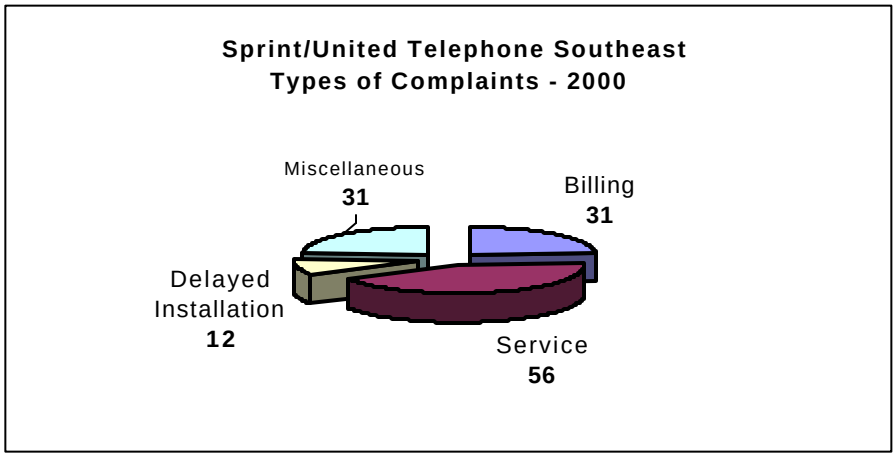


Table 26

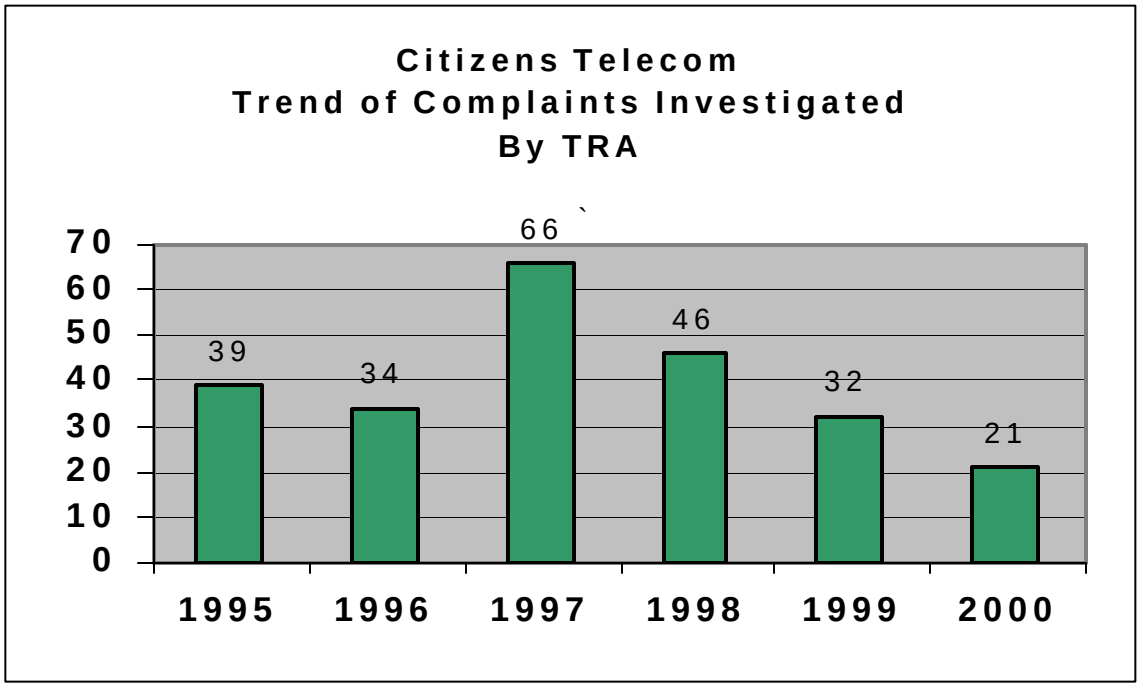
SPRINT/UNITED TELEPHONE SOUTHEAST TROUBLE PER 100 ACCESS LINES 1995 AND 1999			
Sprint/United Telephone Southeast Exchange Size	1995 Avg. Trouble Reports[12]	1999 Avg. Trouble Reports	Percentage Difference
< 3000 access lines	1.9	2.5	+32%
Between 3000-14,000 access lines	1.8	2.1	+17%
> 14,000 access lines	1.3	1.5	+15%

Table 27

Citizens Service Performance

Citizens is the third largest local telephone service provider in the state serving areas in several counties in Middle and West Tennessee. Citizen serves approximately 102,000 access lines. The trend in consumer complaints investigated by the TRA has generally declined with the exception of 1997 and 1998. The yearly average number of complaints filed with the TRA against Citizens is 40 since 1995. Noteworthy is the 50 percent drop in the number of service complaints filed with the TRA during the year 2000 against Citizens compared with similar complaints for 1995.

[12] Sprint/United Telephone Southeast's 1995 average is based on January through August data.



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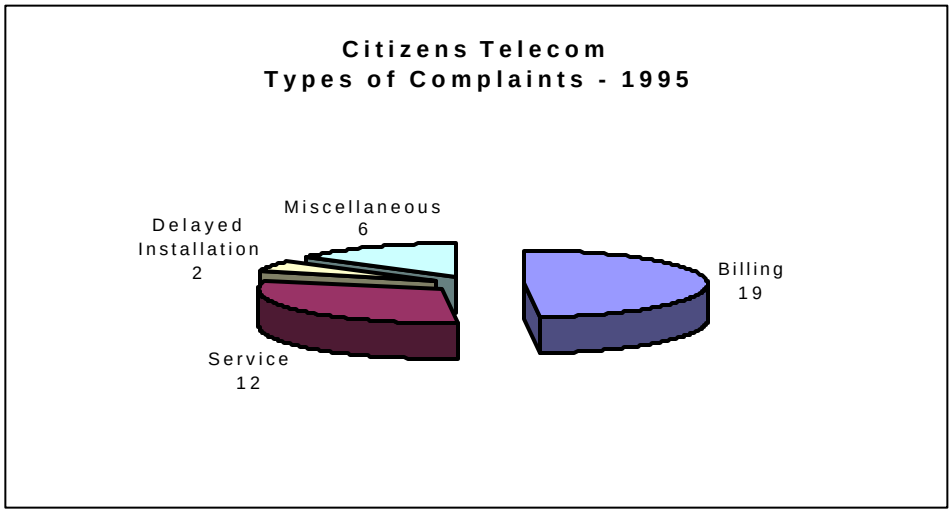

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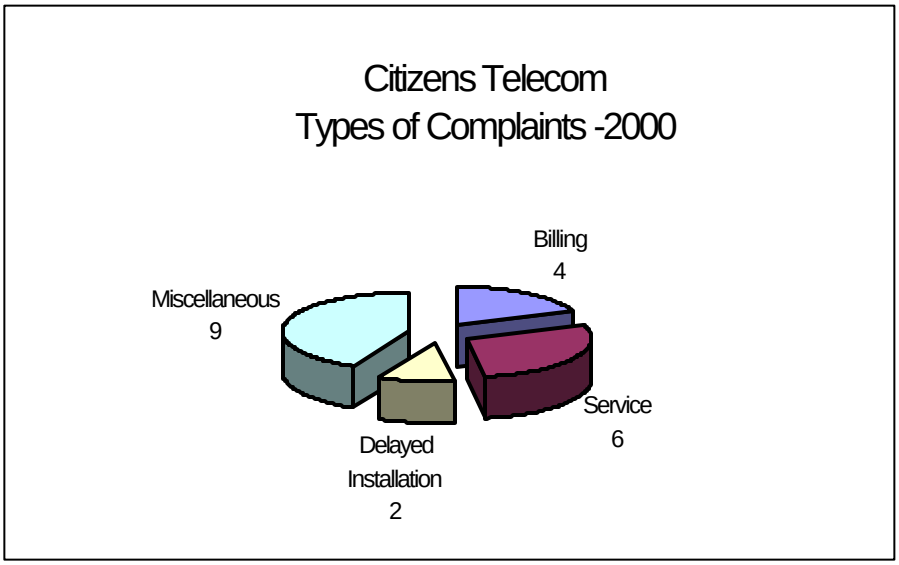


Table 30

CITIZENS TELECOM TROUBLE PER 100 ACCESS LINES 1995 AND 1999			
Citizens Exchange Size	1995 Avg. Trouble Reports	1999 Avg. Trouble Reports	Percentage Difference
< 3000 access lines	2.2	2.4	+ 09
Between 3000-14,000 access lines	1.5	2.3	+ 53
> 14,000 access lines	2.9	1.9	(34)

Table 31

B. TRA Actions to Improve Telephone Service Quality

As part of its statutory obligation to ensure that telephone companies provide an adequate level of service quality, the TRA monitors the quality of telephone service through the filing of quarterly service standard reports by incumbent telephone companies and mediates consumer complaints. Telephone companies are required to submit quarterly reports to the TRA that indicate whether the companies by exchange are complying with the TRA Telephone Service Standards. When deficiencies are observed, the TRA contacts the company and requires a corrective plan to address chronic service problems.

The present regulations on telephone service standards for our state were, in most cases, adopted in the early 1970s. As suspected, customer service expectations, technology advances and public policy changes have required telephone companies to provide better telephone service than existed in the 1970s. The regulatory service objective of eliminating telephone party lines and static on calls during the 1960s and 1970s have been refocused to ensuring that the substantive improvements in the quality of telephone service achieved over the past decade does not deteriorate with the advent of local telephone competition.

The TRA has recognized that our present telephone service standard regulations may not be sufficient to ensure that the legislative mandate that telephone companies maintain the same quality of service that existed in 1995. Based upon several quality of service indicators mentioned above, as well as new public interest issues, the TRA has undertaken a major rewrite of our state's quality of service regulations. On September 29, 2000, the TRA published proposed new rules and regulations updating our agency's telephone service standards. Beginning in January 2001 the TRA began a series of workshops with the Industry to explain the proposed rules and obtain comment.

The proposed service standard rules will set minimum standards that telephone companies have to meet. The regulations are specifically designed to ensure that the 3.7 million Tennesseans continue to have access to quality telephone services in an emerging competitive telecommunications environment. The Proposed rules cover a variety service quality areas such as:

Customer Refunds for Service Outages – If a customer's local service is interrupted due to no fault of the customer for more than 24-hours after being reported, a credit will be made to the customer's account.

Disconnection of Local Telephone Service – Greater safeguards are proposed to prevent the disconnection of a customer's local service. The conditions under which a customer's local telephone service may not be terminated are non-payment of non-regulated services and long distance charges.

The Privacy of Customer Information – Telecommunications service providers would be prohibited from disclosing information about their customers, such as name, address, calling patterns, and other personal information to marketing companies.

More Stringent Service Quality Objectives – The level of monthly reported trouble per 100 telephone access lines within an exchange would be reduced from the current level. Also a standard would be set requiring telephone companies to restore a certain percentage of out-of-service complaints within 24 hours.

Installation of New Service – Establish standards that would require the quicker installation of new telephone service. Existing standards require a range of between 75 percent to 85 percent installation of new telephone service within five (5) working days.

Answer Time Standards – A standard is proposed to require telephone companies to answer within a certain amount of time customer calls to the company. This standard is designed to ensure that customers can access the telephone company over the telephone to resolve disputes, have questions answered or report service problems.

Number Conservation – Obligations are set forth requiring telecommunications service providers to make wise use of numbering resources. This proposed regulation is designed to ensure that our state's telephone numbering resources are used judiciously thereby reducing the need to add new area codes.

Lifeline and Link-up – Requires telephone companies that provide these telephone assistance plans to work with the TRA to develop a public education program on the availability of these low-cost telephone plans.

C. Status of Slamming in Tennessee

One of the dark aspects of telecommunications competition is the unauthorized switching of a customer's local or long distance carrier without their permission. This practice is commonly referred to as slamming. The FCC has reported slamming as its number one source of consumer complaints. Similarly, slamming complaints are a problem in Tennessee as illustrated on Table 32.

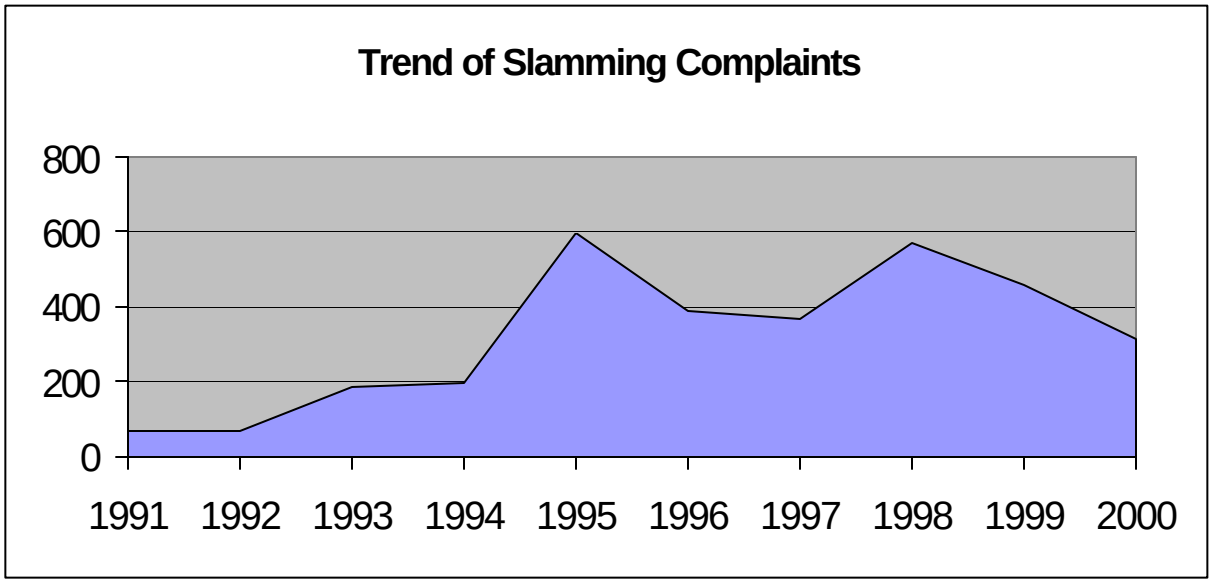


Table 32

The General Assembly has recognized the problem with slamming in our state and has greatly increased the TRA's power to combat this form of consumer abuse. The statutory fine for slamming in our state is now up to $1,000 per offense. The TRA has actively enforced slamming statutes. TRA enforcement actions have been taken against eight (8) offending telecommunications service providers since 1998. These service providers have agreed to pay the state $406,200 in civil fines and to take immediate actions to correct its processes and make refunds to consumers slammed.

As illustrated on the Trend of Slamming Complaints graph above, the efforts of the General Assembly and TRA is proving to be effective. The number of slamming complaints investigated by the TRA during 2000 (310) is the lowest number of such complaints since 1994 (193). There is some initial evidence that the TRA's strict enforcement of our state's new tough anti-slamming statutes has received the attention of the few telecommunications service providers engaged in the illegal practice of slamming.

At the time of the last Competition Report by the TRA, slamming complaints were confined to the long distance market. Unfortunately, slamming is also beginning to penetrate the local telephone service arena. During the two-year period of 1999 – 2000, the TRA received 59 local slamming complaints. One company found guilty of local slamming by the TRA in August 2000 agreed to pay a fine of $50,000 to the state. During the time of the preparation of this report, the TRA is investigating another company for local slamming.

D. Small and Minority-Owned Business Plans

T.C.A. § 65-5-212 mandates telecommunications service providers file with the TRA their organization's program to purchase goods and services from small and minority-owned businesses. The statute mentioned above identifies a small and minority-owned business as a business which, at a minimum, 51 percent of the business assets or stock is owned by an individual who personally manages and controls the daily operations of such businesses and who is impeded from normal entry into the economic mainstream because of race, religion, sex, or national origin. A final prerequisite is that the business has annual gross receipts of less than four (4) million dollars. The objective of T.C.A. § 65-5-212 is to ensure that no group is excluded from participating in the telecommunications revolution because of race, sex, religion or national origin.

Telecommunications service providers are required to file a Small and Minority-Owned Business Plan (hereafter referred to as the "Plan") with the TRA as part of their application to do business in Tennessee. Providers with insufficient plans are rejected until minimum requirements are satisfied.

Evaluation of Small and Minority-Owned Business Plans of Telecommunications Service Providers in Tennessee.

As part of its oversight, the TRA conducts periodic evaluations of the Plans. The evaluation process is designed to assess the level of implementation and the overall effectiveness of the Plans as outlined by the provider. In order to provide copies of these Plans to the potential businesses, the TRA has listed each TSP's plan on its web site located at www.state.tn.us/tra. At the time of application, the TRA evaluates the design of the Plans from a prospective basis. This evaluation looks at the Plans post implementation.

A survey instrument is developed and mailed to telecommunications companies requesting their response by a certain date. Particular focus was given in the survey to determining whether the providers had identified potential small and minority-owned businesses and the level of business awarded to these businesses. The results of the survey are forwarded to the Tennessee Department of Economic and Community Development to assist in its administration of the state's Small and Minority-Owned Business Loan Program. A list of the survey questions mailed to providers is found on Appendix 9.

In the TRA's previous report on the Status of Local Competition in Telecommunications, a total of thirty-eight (38) providers were surveyed. Less than 29 percent indicated that they had awarded at least one contract to a small and minority-owned business during 1996 and 1997. The reason for this lack of activity was the fact that few of the competing providers had actually begun doing business in Tennessee. Projections, however, of such business by new competing telephone companies showed promise. Two competing telephone providers estimated future contracts with such businesses at approximately $700,000.

Of the established incumbent telephone companies, many it appeared were making efforts to identify and enter into business relationships with such businesses. While some of the larger providers such as BellSouth, MCI WorldCom and AT&T could not provide Tennessee specific estimates of the dollar amount going to such businesses, conservative

estimates reveal over $6.8 million was likely contracted out to small and minority-owned businesses in Tennessee.

Since the last report on this subject, many new competing providers have obtained approval to provide local telephone service. This increased number of local providers increases the number of companies that will be surveyed in this section. Compared to the thirty-eight surveys mailed for the last report, a total of 114 telecommunications companies were mailed the survey for this report. A breakdown of the different type of companies surveyed follows:

SURVEY OF SMALL AND MINORITY-OWNED TELECOMMUNICATIONS PLANS

TYPE OF TELECOMMUNICATIONS COMPANY	SURVEYS MAILED	RESPONSES RECEIVED	RESPONSE RATE
Incumbent Telephone Companies	19	19	100%
Competitive Telephone Companies	87	49	56%
Interexchange (Long Distance) Companies	13	5	38%
TOTALS	114	73	64%

Table 33

A total of 33 competing telecommunications service providers responded that they had not yet began doing business in Tennessee and had not entered into any contracts with small and minority-owned businesses. The results of the survey do not include these yet-to-do-business competing telecommunications service providers.

The overwhelming majority of small and minority-owned business opportunities with telecommunications service providers continue to be from incumbent telephone companies. While the TRA has been active in approving requests from new competing local service

providers to conduct business in our state, these new providers have decided to postpone commencing operations in Tennessee. The new providers that have initiated telecommunications services in the state are forming what could be referred to as "hollow organizations" relying almost exclusively on reselling the existing network of incumbent providers. With little or no workforce or plant in Tennessee, these few new operating providers indicate that few contract opportunities exist with their company within the state. Time will tell whether these new providers will succeed in the telecommunications market and provide expanded business opportunities for small and minority-owned business in the state. Almost all companies responding appear to have named an individual to administer its plan.

It appears that contract opportunities do exist with the small incumbent telephone companies, but are not being taken advantage of by small and minority-owned businesses. Several of these small companies indicated that they were restricted on work projects where funding was received from the Rural Utility Service ("RUS") to using RUS qualified contractors. Small and minority-owned businesses interesting in pursuing these opportunities should take the necessary steps to be included on the RUS list of qualified contractors.

Telecommunications providers indicated that approximately $11.28 billion was spent in obtaining goods and services from small and minority-owned businesses during the time of 1999 through 2000. This figure does not translate into expenditures for Tennessee specific businesses, but reflects nationwide estimates.

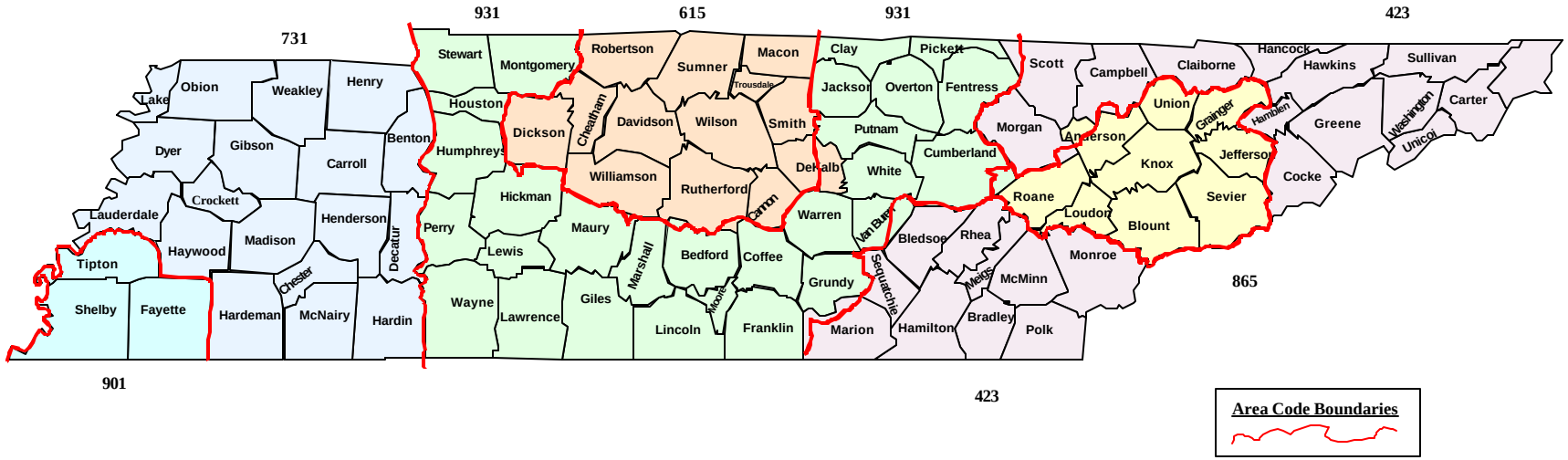
Continued difficulties are reported by some telecommunications service providers in obtaining names of small and minority-owned businesses in Tennessee. A few providers indicated that they are making efforts to solicit such businesses by attending Trade Fairs and Chamber of Commerce activities. The most innovative method is where one new local provider is listing contract opportunities on its web page. Likewise, the TRA is making available on its web page copies of all Small and Minority-Owned Business Plans.

In conclusion, the latest survey demonstrates that a number of Tennessee's telecommunications service providers are actively seeking to utilize small and minority

telecommunications businesses as part of their operations. However, there appear to be additional opportunities for all telecommunications providers to further utilize these businesses especially among the new market entrants.

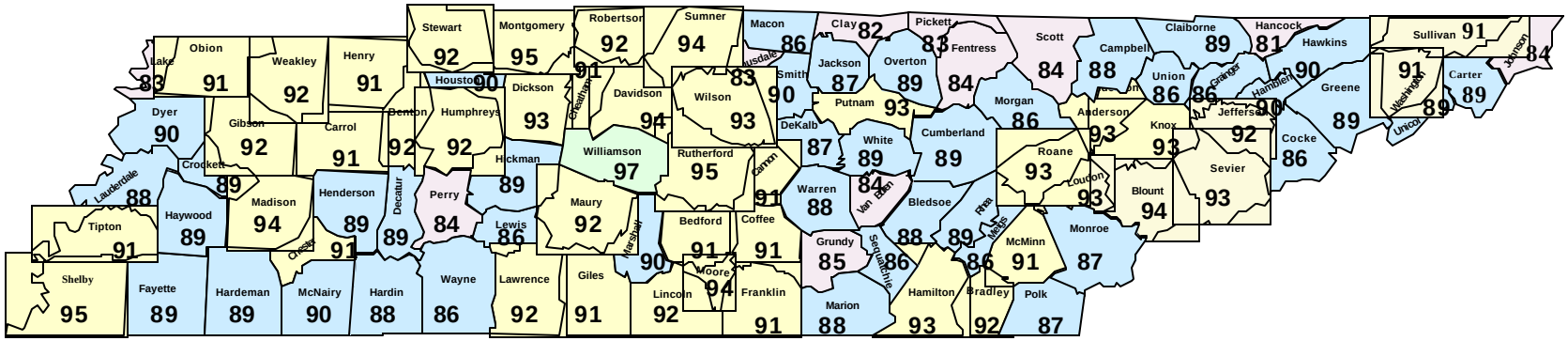
X. MAPS AND APPENDICES

TENNESSEE AREA CODES



TELEPHONE SUBSCRIBERSHIP IN TENNESSEE (1990)

Percent of Households with Telephone Service



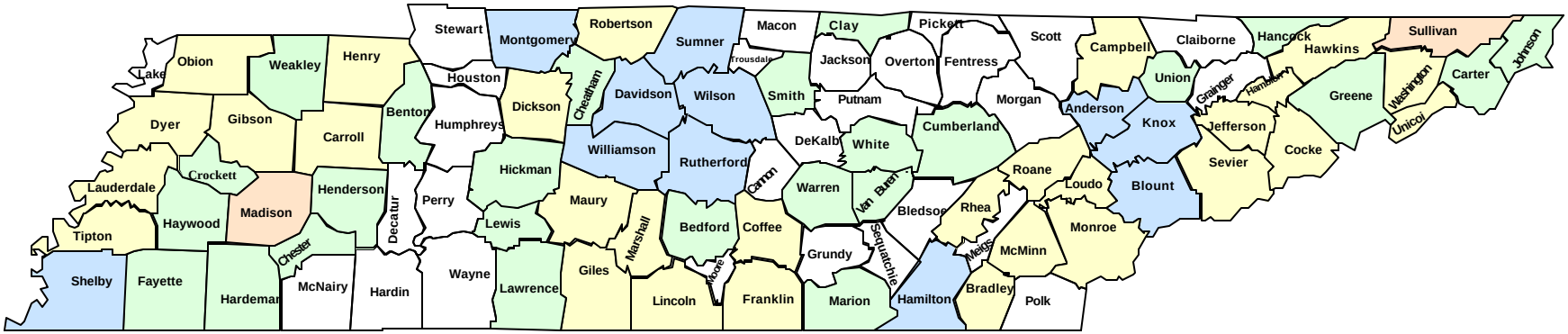
Source: U.S. Census Bureau

Percent of Households with Telephone Service

- 80%-85%
- 86%-90%
- 91%-95%
- 96%-100%

TENNESSEE COMPETING LOCAL EXCHANGE CARRIERS

December 2000



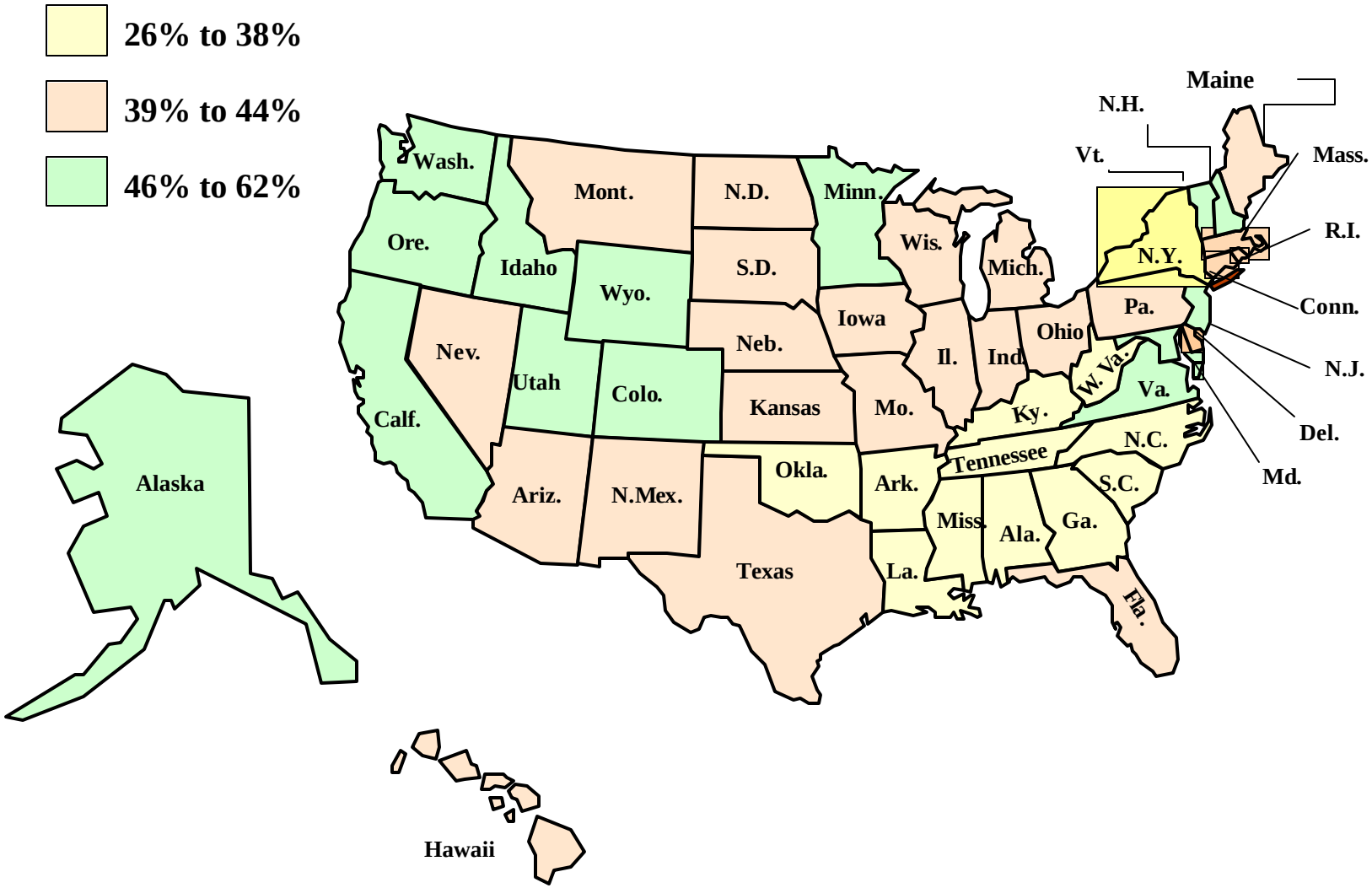
Number of CLEC Providers Serving County

- **1-2**
- **3-4**
- **5-6**
- **7 or More**
- **No report of CLEC serving these counties**

Source: CLEC Wireline Reports

MAP 4

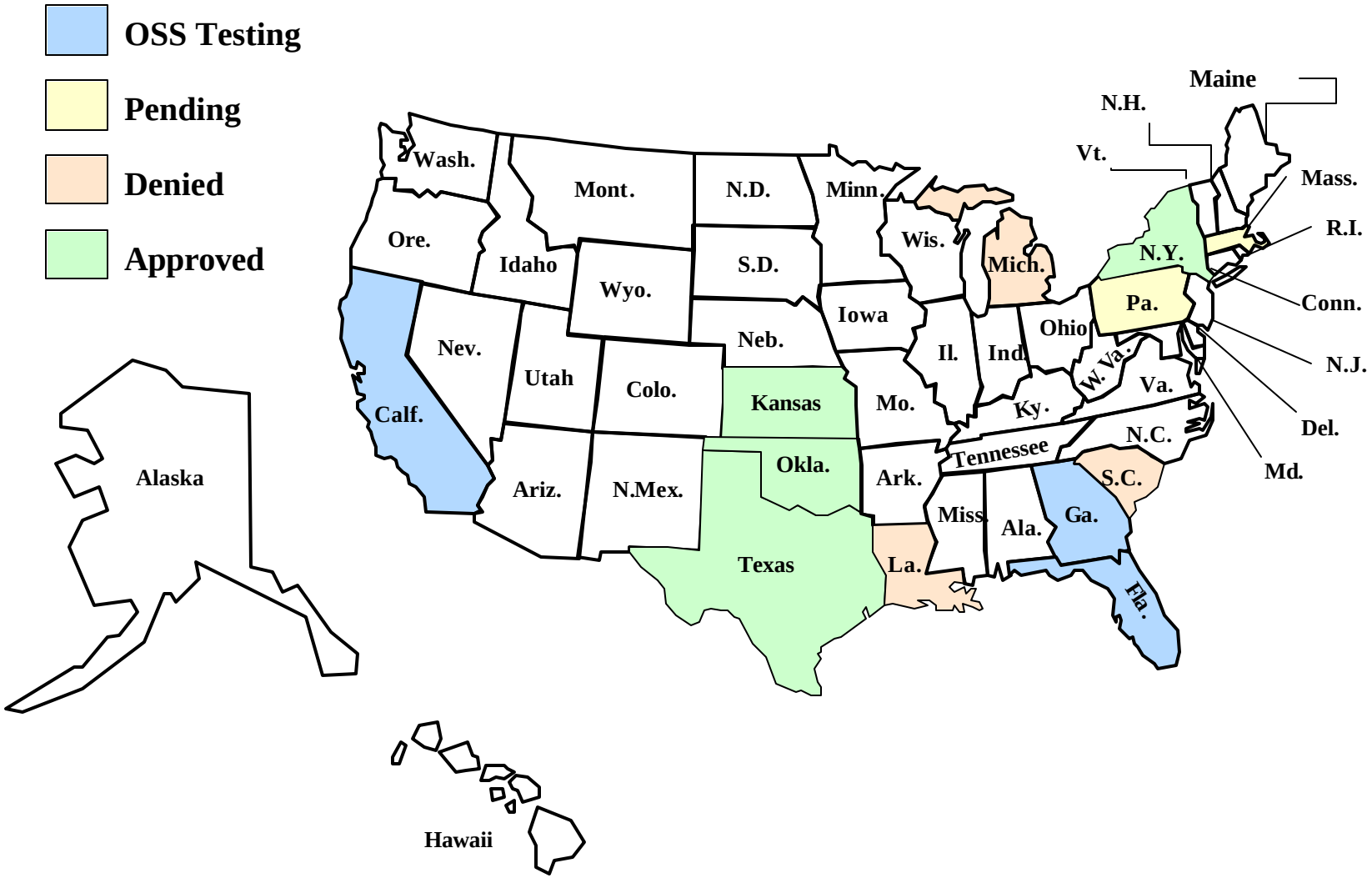
THE "DIGITAL DIVIDE"
In 1998, 37.5% of Tennessee's Households Had Computers



Sources: Department of Commerce & The Tennessean

271 APPLICATIONS & OSS TESTING

January 2001



Source: Federal Communications Commission

TENNESSEE ACCESS LINES BY PROVIDER

	Company	12/31/00 Access Lines
1.	Ardmore Telephone Company	3,005
2.	BellSouth Telecommunications	2,688,206
3.	Ben Lomand Telephone Cooperative*	36,072
4.	Bledsoe Telephone Cooperative*	11,746
5.	CenturyTel Companies	27,781
6.	Citizens Telecommunication Companies	101,706
7.	DTC Communications*	20,651
8.	Highland Telephone Cooperative*	17,944
9.	Loretto Telephone Company	6,222
10.	Millington Telephone Company	26,996
11.	North Central Telephone Cooperative*	15,701
12.	Scott County Telephone Cooperative*	72
13.	Skyline Telephone Membership Corporation*	460
14.	TDS Telecommunications Companies	102,320
15.	Telephone Electronics Corporation Companies	14,470
16.	Twin Lakes Telephone Cooperative*	37,277
17.	Sprint/United Telephone-Southeast	268,206
18.	United Telephone Company	14,377
19.	West Kentucky Telephone Cooperative*	2,430
20.	Yorkville Telephone Cooperative*	2,079
	Total Incumbent Lines	3,397,721
	Total CLEC and Reseller Lines	290,223
	Total Tennessee Access Lines	3,687,944

Sources: Tennessee 3.01 Reports and the Tennessee Telephone Association.
* Telephone cooperatives are not subject to TRA regulation.

COMPETITORS COLLOCATED IN CENTRAL OFFICES OF NON-RURAL PROVIDERS

December 31, 2000

	BellSouth	Sprint/United
Central Offices with 7 or More Competitors Collocated	20%	0%
Central Offices with 5 or 6 Competitors Collocated	8%	0%
Central Offices with 2, 3 or 4 or More Competitors Collocated	7%	16%
Central Offices with 1 Competitor Collocated	8%	16%
Central Offices with 0 Competitors Collocated	58%	68%
	100%	100%

BELLSOUTH CENTRAL OFFICES
NUMBER OF COLLOCATED CLECS
12/31/00

Central Office	# CLECs Collocated	Central Office	# CLECs Collocated
Adams-Cedar Hill	0	Dandridge	0
Arlington	0	Dayton	0
Ashland City	0	Decatur	0
Athens	1	Dickson	2-4
Bean Station	0	Dover	0
Bells	0	Dyer	0
Bent Creek	0	Dyersburg	2-4
Benton	0	Eagleville	0
Bethel Springs	0	East Sango	0
Big Sandy	0	Elkton	0
Blanche	0	Etowah	0
Bolivar	0	Fairview	0
Brownsville	0	Fayetteville	0
Bulls Gap	0	Flintville	0
Camden	0	Fork Ridge	0
Carthage	0	Franklin	7 or More
Cedar Hill	0	Franklin-Cool Springs	2-4
Centerville	0	Fredonia	0
Charleston	0	Gallatin	7 or More
Charlotte	0	Gatlinburg	2-4
Chattanooga-Brainerd	7 or More	Georgetown	0
Chattanooga-Dodds	7 or More	Gibson	0
Chattanooga-Harrison	1	Gleason	0
Chattanooga-Middle Valley	2-4	Goodlettsville	7 or More
Chattanooga-Ninth Street	7 or More	Grand Junction	0
Chattanooga-Red Bank	7 or More	Greenback	0
Chattanooga-St Elmo	2-4	Greenbrier	0
Chestnut Hill	0	Greenfield	0
Clarksville	7 or More	Halls	0
Cleveland	5-6	Hampshire	0
Clinton	1	Harriman	0
Collierville	7 or More	Hartsville	0
Columbia	7 or More	Henderson	0
Copper Basin	0	Hendersonville	7 or More
Covington	0	Henning	0
Cross Plains	0	Hohenwald	0
Culleoka	0	Hornbeak	0
Cumberland City	0	Humboldt	0
Cumberland Gap	0	Huntington	0
Cunningham	0	Huntland	0

BELLSOUTH CENTRAL OFFICES
NUMBER OF COLLOCATED CLECS
12/31/00

Central Office	# CLECs Collocated	Central Office	# CLECs Collocated
Jackson-Main	5-6	Memphis-Main	7 or More
Jackson-Northside	2-4	Memphis-Midtown	7 or More
Jasper	0	Memphis-Oakville	7 or More
Jefferson City	0	Memphis-Southland	7 or More
Jellico	0	Memphis-Southside	7 or More
Kenton	0	Memphis-Southwind	1
Kingston	1	Memphis-Westwood	2-4
Kingston Springs	0	Michie	0
Knoxville-Bearden	7 or More	Middleton	0
Knoxville-Fountain City	7 or More	Milan	0
Knoxville-Main	7 or More	Morristown	2-4
Knoxville-West Hills	7 or More	Moscow	0
Knoxville-Young High	7 or More	Mount Pleasant	0
LaFollette	0	Murfreesboro	7 or More
LaGrange	0	Nashville-Airport	7 or More
Lake City	0	Nashville-Bellevue	7 or More
Lawrenceburg	1	Nashville-Brentwood	7 or More
Lebanon	7 or More	Nashville-Burton Hills	1
Lenoir City	2-4	Nashville-Cockrill Bend	1
Lewisburg	0	Nashville-Crieve Hall	7 or More
Lexington	1	Nashville-Donelson	7 or More
Loudon	0	Nashville-Hickory Hollow	1
Lyles	0	Nashville-Inglewood	7 or More
Lynchburg	0	Nashville-Madison	7 or More
Lynnville	0	Nashville-Main	7 or More
Madisonville	0	Nashville-Sharondale	7 or More
Manchester	1	Nashville-University	7 or More
Maryville	7 or More	Nashville-West Meade	7 or More
Mascot	1	Newbern	0
Maynardville	0	Newport	2-4
McEwen	0	Normandy	0
McKenzie	0	Norris	0
Medina	0	North Spring Hill	0
Memphis-Bartlett	7 or More	Oak Ridge	7 or More
Memphis-Cherokee	5-6	Old Hickory	0
Memphis-Chickasaw	7 or More	Oliver Springs	0
Memphis-Eastland	7 or More	Palmyra	0
Memphis Frayser	5-6	Paris	1
Memphis-Germantown	7 or More	Petersburg	0
Memphis-Humphreys	2-4	Pleasant View	0

BELLSOUTH CENTRAL OFFICES
NUMBER OF COLLOCATED CLECS
12/31/00

Central Office	# CLECs Collocated	Central Office	# CLECs Collocated
Portland	0	Waverly	0
Pulaski	1	West Sweetwater	0
Ridgely	0	West Vanleer	0
Ripley	0	White Bluff	0
Rockwood	0	White House	0
Rogersville	0	White Pine	0
Sango	0	Whiteville	0
Sante Fe	0	Whitwell	0
Savannah	0	Williamsport	0
Selmer	0	Winchester	1
Sevierville	5-6		
Sewanee	0		
Shelbyville	2-4		
Smyrna	5-6		
Sneedville	0		
So. Cunningham	0		
So. Fredonia	0		
So. Fulton	0		
So. Guthrie	0		
So. Oak Grove	0		
So. Pittsburg	0		
Soddy-Daisy	0		
Solway	0		
Somerville	0		
Spencer Mill	0		
Spring City	0		
Spring Hill	0		
Springfield	1		
Summertown	0		
Surgoinsville	0		
Sweetwater	0		
Tiptonville	0		
Trenton	0		
Triune	0		
Troy	0		
Tullahoma	2-4		
Union City	0		
Vanleer	0		
Wartrace	0		
Watertown	0		

COMPARISON OF TENNESSEE RESIDENTIAL TELEPHONE CHARGES 1995 TO 2000

Average Monthly Expenditures:

	Low Volume Users		Average Volume Users		High Volume Users	
	1995	2000	1995	2000	1995	2000
Local Services [1/]	$13.84	$13.09	$26.25	$26.50	$56.68	$53.54
Long Distance Services [2/]	3.05	3.20	15.83	14.17	39.56	23.49
Interstate Surcharges [3/]	3.50	4.92	3.50	5.85	7.00	13.74
Total Monthly Expenditures	$ 20.39	$21.21	$45.58	$46.51	$103.24	$90.77
Monthly Increase (Decrease) Over 1995	$0.82		$0.94		$(12.47)	
	4%		2%		(12)%	

[1/] Includes access line, touchtone, custom calling features and intraLATA toll charges.

[2/] Includes intrastate interLATA and interstate long distance charges. Minimum Usage charges also included.

[3/] Includes subscriber line charges, carrier line charges, number portability charge and universal access surcharges.

TENNESSEE INCUMBENT TELEPHONE COMPANIES
SERVICE AREAS

BellSouth Telecommunications

Adams-Cedar Hill	Etowah	Lexington	Sevierville
Arlington	Fairview	Loudon	Sewanee
Ashland City	Fayetteville	Lyles	Shelbyville
Athens	Flintville	Lynchburg	Smyrna
Bean Station	Fork Ridge	Lynnville	Sneedville
Bells	Franklin	Madisonville	Soddy-Daisy
Bent Creek	Fredonia	Manchester	Somerville
Benton	Gallatin	Maryville	So. Cunningham
Bethel Springs	Gatlinburg	Mascot-Strawberry Plains	So. Fredonia
Big Sandy	Georgetown	Maynardville	So. Fulton
Blanche	Gibson	McEwen	So. Guthrie
Bolivar	Gleason	McKenzie	So. Oak Grove
Brownsville	Goodlettsville	Medina	So. Pittsburg
Bulls Gap	Grand Junction	Memphis	Spencer Mill
Camden	Greenback	Michie	Spring City
Carthage	Greenbrier	Middleton	Springfield
Cedar Hill	Greenfield	Milan	Spring Hill
Centerville	Halls	Morristown	Summertown
Charleston	Hampshire	Moscow	Surgoinsville
Charlotte	Harriman	Mount Pleasant	Sweetwater
Chattanooga	Hartsville	Murfreesboro	Tiptonville
Chestnut Hill	Henderson	Nashville	Trenton
Clarksville	Hendersonville	Newbern	Triune
Cleveland	Henning	Newport	Troy
Clinton	Hohenwald	Normandy	Tullahoma
Collierville	Hornbeak	Norris	Union City
Columbia	Humboldt	North Spring Hill	Vanleer
Copper Basin	Huntington	Oak Ridge	Wartrace
Covington	Huntland	Old Hickory	Watertown
Cross Plains	Jackson	Oliver Springs	Waverly
Culleoka	Jasper	Palmyra	West Vanleer
Cumberland City	Jefferson City	Paris	West Sweetwater
Cumberland Gap	Jellico	Petersburg	White Bluff
Cunningham	Kenton	Pleasant View	White House
Dandridge	Kingston	Portland	White Pine
Dayton	Kingston Springs	Pulaski	Whiteville
Decatur	Knoxville	Ridgely	Whitwell
Dickson	LaFollette	Ripley	Williamsport
Dover	LaGrange	Rockwood	Winchester
Dyer	Lake City	Rogersville	
Dyersburg	Lawrenceburg	Sango	
Eagleville	Lebanon	Sante Fe	
East Sango	Lenoir City	Savannah	
Elkton	Lewisburg	Selmer	

TENNESSEE INCUMBENT TELEPHONE COMPANIES SERVICE AREAS

Adamsville (CenturyTel)
Adamsville
Enville
Milledgeville
Shiloh

Ardmore Telephone Company
Ardmore
McBurg
Minor Hill

Citizens Telecommunications
Cookeville
Crossville
Dresden
Latham
Martin
McMinnville
Monterey
Palmersville
Pleasant Hill
Sharon
Sidonia
Sparta
Tansi

Citizens Telecommunications
Claxton
Powell
Rutledge
Tate Springs
Washburn

Claiborne (CenturyTel)
New Tazewell
Sharps Chapel

Concord (TDS)
Concord

Crockett (TEC)
Alamo
Friendship
Maury City

Humphreys County (TDS)
New Johnsonville

Loretto Telephone Company
Ethridge
Leoma
Loretto
Five Points
St. Joseph

Millington Telephone Company
Drummonds
Mason
Millington
Munford
Rosemark
Shelby Forest
Stanton

Ooltewah-Collegedale (CenturyTel)
Apison
Collegedale
Ooltewah

Peoples (TEC)
Erin
Henry
Tennessee Ridge

Sprint United
Baileyton
Blountville
Bluff City
Bristol
Butler
Church Hill
Elizabethton
Erwin
Fall Branch

Tellico (TDS)
Ball Play
Coker Creek
Englewood
Niota
Riceville
Vonore

Tennessee Telephone (TDS)
Bruceton
Clifton
Collinwood
Cornersville
Darden
Decaturville
Halls Cross Roads
Lavergne
Linden
Lobelville
Mt. Juliet
Parsons
Sardis
Scotts Hill
Waynesboro

United Telephone Company
Belfast
Chapel Hill
College Grove
Estill Springs
Flat Creek
Fosterville
Nolensville
Unionville

West Tennessee Telephone (TDS)
Atwood
Bradford
Rutherford
Trezevant

TENNESSEE TELEPHONE COOPERATIVES SERVICE AREAS

(Not Regulated by the TRA)

Ben Lomand Telephone Cooperative
Beech Grove
Beersheba-Altamount
Bon Decroft
Centertown
Dibrell
Doyle
Hillsboro
Laager
McMinnville Rural
Monteagle
Old Zion
Pelham
Rock Island
Sparta Rural
Spencer
Tracy City
Viola

Bledsoe Telephone Cooperative
College Station
Dunlap
Fall Creek Falls
Nine Mile
Pikeville

DCT Communications
Alexandria
Auburntown
Gordonsville
Liberty
Milton
Norene
Smithville
Temperance Hall
Woodbury
Woodland

Highland Telephone Cooperative
Deer Lodge
Huntsville
Oakdale
Oneida
Petros
Robbins
Sunbright
Wartburg

North Central Telephone Cooperative
Bethpage
Defeated
Green Grove
Hillsdale
Lafayette
Oak Grove
Pleasant Sahde
Red Boiling Springs
Westmoreland
Scottsville Rural (KY)

Scott County Telephone Cooperative
Eidson
Sneedville

Skyline Telephone Membership Cooperative
Shady Valley

Twin Lakes Telephone Cooperative
Baxter
Byrdstown
Celina
Chestnut Mound
Clarkrange
Cookeville South
Crawford
Gainesboro
Granville
Highland
Jamestown
Livingston
Moss
North Springs
Rickman

West Kentucky Telephone Cooperative
Cottage Grove
Cypress
Puryear

Yorkville Telephone Cooperative
Brazil
Mason Hall
Trimble
Yorkville

TENNESSEE COMPETING LOCAL EXCHANGE CARRIERS (CLECS)

	Company Name	Company Location
1.	@Link Networks, Inc.	Richardson, TX
2.	2nd Century Communications, Inc.	Tampa, FL
3.	Access Integrated Networks, Inc.	Macon, GA
4.	Accutel of Texas	Dallas, TX
5.	Actel Integrated Communications, Inc.	Mobile, AL
6.	Adelphia Business Solutions Operations, Inc.	Coudersport, PA
7.	Adelphia Business Solutions of Nashville	Canonsburg, PA
8.	Aeneas Communications, Inc.	Jackson, TN
9.	Alec, Inc.	Kennesaw, GA
10.	American Fiber Systems, Inc.	Rochester, NY
11.	Arbros Communications Licensing Company S.E.	Bethesda, MD
12.	AT&T Communications of the South Central States	Nashville, TN
13.	BellSouth BSE, Inc.	Atlanta, GA
14.	Ben Lomand Communications, Inc.	McMinnville, TN
15.	Birch Telecommunications of the South, Inc.	Kansas City, MO
16.	BlueStar Networks, Inc.	Franklin, TN
17.	BroadBand Office Communications, Inc.	Falls Church, VA
18.	BroadRiver Communications Corporation	Alpharetta, GA
19.	BroadSlate Networks of Tennessee, Inc.	Charlottesville, VA
20.	BroadSpan Communications, Inc.	St. Louis, MO
21.	BroadStreet Communications, Inc.	Canonsburg, PA
22.	Brooks Fiber Communications of Tennessee, Inc.	Atlanta, GA
23.	Business Telecommunications, Inc.	Raleigh, NC
24.	CaroNet, Inc.	Research Park, NC
25.	CCCTN, Inc. d/b/a Connect!	Little Rock, AR
26.	Citizens Telecommunications Company of Tennessee	Bethesda, MD
27.	ConnectSouth Communications of Tennessee, Inc.	Austin, TX
28.	DIECA Communications, Inc.	Santa Clara, CA
29.	Digital Access Corporation of Tennessee, Inc.	Bala Cynwd, PA
30.	Digital Teleport, Inc.	St. Louis, MO
31.	DSLnet Communications, LLC	New Haven, CT
32.	e.spire Communications, Inc.	Annapolis, MD
33.	Eagle Communications, Inc.	New York, NY
34.	Electric Power Board of Chattanooga	Chattanooga, TN
35.	Empire Telecommunications Services, Inc.	Atlanta, GA
36.	Enron Broadband Services, Inc.	Houston, TX
37.	Gabriel Communications of Tennessee, Inc.	Chesterfield, MO
38.	GLA International	O Fallon, MO
39.	Global Crossing Local Services, Inc.	Rochester, NY
40.	Global NAPS Gulf, Inc.	Quincy, MA
41.	ICG Telecommunications Group, Inc.	Tallahassee, FL
42.	IG2, Inc.	Kew Garden, NY
43.	Intermedia Communications, Inc.	Tampa, FL
44.	ITC^DeltaCom Communications, Inc.	Huntsville, AL
45.	JATO Operating Two Corp.	Greenwood, CO
46.	KMC Telecommunications III, Inc.	Lawrenceville, GA
47.	Knology of Tennessee, Inc.	West Point, GA

TENNESSEE COMPETING LOCAL EXCHANGE CARRIERS (CLECS)

	Company Name	Company Location
48.	LCI International Telecommunications, Corp.	Denver, CO
49.	Level 3 Communications, LLC	Broomfield, CO
50.	Logix Communications Corp.	Oklahoma City, OK
51.	Madison River Communications, LLC	Mebane, NC
52.	Maverix.com, Inc. d/b/a Maverix.net	Chicago, IL
53.	Maxcess, Inc.	Orlando, FL
54.	MCG Communications, Inc.	Pittsford, NY
55.	MCI WorldCom	Atlanta, GA
56.	MCI WorldCom Communications	Atlanta, GA
57.	MCI WorldCom Network Services, Inc.	Atlanta, GA
58.	MCImetro Access Transmission Services	Atlanta, GA
59.	Metromedia Fiber Network Services, Inc.	White Plains, NY
60.	Metropolitan Fiber Systems of Tennessee	Atlanta, GA
61.	McLeodUSA Telecomm Services (MTS)	Cedar Rapids, IA
62.	NA Communications, Inc.	Waynesboro, VA
63.	Navigator Telecommunications, LLC	Little Rock, AR
64.	Network Access Solutions	Herndon, VA
65.	Network Plus, Inc.	Randolph, MA
66.	Network Telephone Corporation	Pensacola, FL
67.	New Edge Network, Inc.	Vancouver, WA
68.	New South Communications Corp.	Greenville, SC
69.	New Path Holdings, Inc.	Des Moines, IA*
70.	NorthPoint Communications, Inc.	San Francisco, CA
71.	OnePoint Communications, Georgia, LLC	Lake Forest, IL
72.	Pathnet, Inc.	Washington, DC
73.	Premiere Network Services, Inc.	DeSoto, TX
74.	Rhythms Links, Inc.	Washington, DC
75.	Sprint Communications Company, L.P.	Wake Forest, NC
76.	TCG MidSouth, Inc.	Nashville, TN
77.	Teligent Services, Inc.	Vienna, VA
78.	Time Warner Telecommunications of the Mid-South	Franklin, TN
79.	TriVergent Communications, Inc.	Greenville, SC
80.	U S West Interprise America, Inc.	Denver, CO
81.	US LEC of Tennessee, Inc.	Charlotte, NC
82.	US TelePacific Corp. d/b/a TelePacific	Los Angeles, CA
83.	Vectris Telecommunications, Inc.	Austin, TX
84.	Verizon Select Services, Inc	Irving, TX
85.	Williams Communications, Inc.	Tulsa, OK
86.	WinStar Wireless, Inc.	Washington, DC
87.	WorkNet Communications, Inc.	St. Louis, MO
88.	XO Tennessee, Inc.	Nashville, TN
89.	XSPEDIUS Corp.	Lake Charles, LA

TENNESSEE LOCAL RESELLERS

	Company Name	Company Location
1.	1-800 RECONEX, Inc.	Hubbard, OR
2.	A.B.C. Communications	Memphis, TN
3.	All South Phone Connect	Jackson, TN
4.	Alliance Network, Inc.	New Orleans, LA
5.	Alternative Telecommunications Services, Inc.	Brooksville, FL
6.	American MetroComm/Tennessee, Inc.	New Orleans, LA
7.	Ameritech Communications International, Inc.	Pleasanton, CA
8.	Annox, Inc.	Pleasant View, TN
9.	Appliance & TV Rentals, Inc. d/b/a Fones-4-U	Crestview, FL
10.	ATN, Inc.	St. Marys, GA
11.	BellSouth Long Distance, Inc.	Atlanta, GA
12.	Bryant's Wireless Service	Beaufort, SC
13.	Business Telecommunications, Inc.	Raleigh, NC
14.	CAT Communications, Inc.	Roanoke, VA
15.	Choctaw Communications, Inc. d/b/a Smoke Signal	Dallas, TX
16.	CI 2, Inc.	Atlanta, GA
17.	Comm South Companies, Inc.	Dallas, TX
18.	Concert Communications Sales LLC	Basking, NJ
19.	Credit Loans, Inc. d/b/a Lone Star State Telephone	Conroe, TX
20.	Dial Tone, Inc.	Montgomery, AL
21.	Direct-Tel USA, LLC	Center Lovell, ME
22.	DPI-Teleconnect, LLC	Dallas, TX
23.	Eagle Communications, Inc.	New York, NY
24.	Easton Telecommunications Services, Inc.	Richfield, OH
25.	Ernest Communications, Inc.	Norcross, GA
26.	Excel Communications, Inc.	Dallas, TX
27.	Express Connection Telephone Service	Nashville, TN
28.	Express Paging, Inc.	Nashville, TN
29.	EZ Phone, Inc.	Akron, OH
30.	EZ Talk Communications, LLC	Stafford, TX
31.	GE Capital Communication Services Corp.	Atlanta, GA
32.	Global Connection Inc. of Tennessee	Atlanta, GA
33.	Global Crossing Telemanagement, Inc.	Rochester, NY
34.	Golden Financial and Communications System	Memphis, TN
35.	Group Long Distance, Inc.	Ft. Lauderdale, FL
36.	Hart Communications	Valdosta, GA
37.	HFG Enterprises, Inc.	Lenoir City, TN
38.	I-Net Communications, Inc.	Memphis, TN
39.	Image Access, Inc.	Metairie, LA
40.	Intellicall Operator Services, Inc.	Addison, TX
41.	Internet Telephone Company	Irvine. CA
42.	Ivy Joe Barton	Memphis, TN
43.	Joyce F. Hudspeth	Memphis, TN
44.	Lawrence Hansbro d/b/a/ Push Button Paging	Augusta, GA
45.	LDM Systems, Inc.	New York, NY
46.	LEC-Link	Antioch, TN
47.	Max-Tel Communications, Inc.	Alvord, TX
48.	Mexi Tel	Antioch, TN
49.	MoneyPlace, LLC	Union City, TN
50.	National Telecommunications, LLC	Crossville, TN

TENNESSEE LOCAL RESELLERS

	Company Name	Company Location
51.	Navigator Telecommunications, LLC	Little Rock, AR
52.	Net-Tel Corporation	Reston, VA
53.	Network Telephone Corporation	Pensacola, FL
54.	NOW Communications, Inc.	Jackson, MS
55.	NuStar Communications Corp.	Nashville, TN
56.	Omniplex Communications Group, LLC	St. Charles, MO
57.	OnePoint Communications, Georgia, LLC	Lake Forest, IL
58.	Opus Correctional, LLC	Framingham, VA
59.	Paramount International Telecommunications	Vista, CA
60.	Phone-Link, Inc.	LaGrange, KY
61.	Phones For All	Dallas, TX
62.	Rocky Topy Phone Service	Sparta, TN
63.	ServiSense.Com, Inc.	Newton, MA
64.	Shared Communications Services, Inc.	Salem, OR
65.	Southern Telemanagement Group	Gulf Breeze, FL
66.	SouthNet Telecomm Services, Inc.	Grand Haven, MI
67.	Speedy Reconnect, Inc.	Metairie, LA
68.	State Discount Telephone, LLC	Huntsville, AL
69.	Suretel, Inc.	Oklahoma City, OK
70.	Talk.com Holding Corp. d/b/a Network Service	New Hope, PA
71.	Tele-Source	Dickson, TN
72.	Tele-SyS, Inc. d/b/a Access America	Oak Ridge, TN
73.	TeleConex, Inc.	Pensacola, FL
74.	Teleglobe Business Solutions, Inc.	Dallas, TX
75.	Telephone Company of Central Florida, Inc.	Lake Mary, FL
76.	Tennessee Phone Service, Inc.	Nashville, TN
77.	Tennessee Telephone Service	Dickson, TN
78.	The Other Phone Company, Inc.	Orlando, FL
79.	Time Warner Telecommunications of the Mid-South, LP	Franklin, TN
80.	Tin Can Communications Company, LLC d/b/a The Cub	Houston, TX
81.	Touch 1 Communications, Inc.	Atmore, AL
82.	Tri Vergent Communications, Inc.	Greenville, SC
83.	U.S. Dial Tone, Inc.	San Antonio, TX
84.	United Communications Systems, Inc.	Chicago, IL
85.	United Services Telephone, LLC	Nashville, TN
86.	United States Telecommunications, Inc.	Clearwater, FL
87.	Universal Access, Inc.	Chicago, IL
88.	Universal Telecommunications, Inc.	Louisville, KY
89.	USA Quick Phone	Bridgeport, TX
90.	USA Telecommunications, Inc.	Dania, FL
91.	Z-Tel Communications, Inc.	Tampa, FL

TENNESSEE LONG DISTANCE RESELLERS

	Company Name		Company Name
1.	360 Long Distance, Inc.	53.	Cable & Wireless USA, Inc.
2.	A.C.N. Communication Services, Inc.	54.	CallManage, Inc.
3.	ACC National Long Distance Corp.	55.	Capsule Communications, Inc.
4.	Access One, Inc.	56.	Cash Back Rebates LD Com, Inc.
5.	Access Point, Inc.	57.	CAT Communications, Inc.
6.	ACSI Local Switched Services, Inc.	58.	Century Telecommunications, Inc.
7.	Adelphia Telecommunications, Inc.	59.	CenturyTel Long Distance, Inc.
8.	Advantage Telecommunications, Corp.	60.	CEO Telecommunications, Inc.
9.	Affinity Corporation	61.	Chattanooga Metropolitan Airport TRA
10.	Affinity Network, Inc.	62.	Choctaw Communications, Inc. d/b/a Smoke
11.	Airnex Communications, Inc.	63.	CIMCO Communications, Inc.
12.	AllCom USA	64.	Cincinnati Bell Telecommunication Services,
13.	Alliance Group Services, Inc.	65.	Citizens Telecomm. Co., d/b/a Citizens Long
14.	Alliance Network, Inc.	66.	Claricom Networks, Inc.
15.	ALLTEL Communications, Inc.	67.	Coast International, Inc.
16.	Ameri Vision Communications, Inc.	68.	Columbia Telecommunications, Inc.
17.	America's Tele-Network Corp.	69.	Combined Billing Corporation
18.	American Cyber Corporation	70.	Comcast Business Communications, Inc.
19.	American Farm Bureau, Inc. d/b/a The Farm	71.	Comdata Telecommunications Services, Inc.
20.	American Long Lines, Inc.	72.	Communication Network Services, LLC
21.	American Nortel Communications, Inc.	73.	Communication TeleSystems International
22.	American Telco, Inc.	74.	Communications Billing, Inc.
23.	American Telecommunications Enterprise	75.	CommuniGroup of Jackson, Inc.
24.	American Telecommunications Systems	76.	Community Telephone Corporation
25.	American Telesource International, Inc.	77.	Concert Communications Sales, LLC
26.	AmericaNet, LLC	78.	Connect America Communications, Inc.
27.	Americatel Corporation	79.	Connect!LD, Inc.
28.	Americom Technologies, Inc.	80.	Consolidated Billing Provider
29.	Ameritech Communications International, Inc.	81.	Convergent Communications Services, Inc.
30.	Annox, Inc.	82.	CTC Communications Corp.
31.	AS Telecommunications, Inc.	83.	CTC Long Distance Services, Inc.
32.	ASC Telecommunications, Inc.	84.	Custom Network Solutions, Inc.
33.	Associated Network Partners, Inc.	85.	D.D.D. Calling, Inc.
34.	Association Administrators, Inc.	86.	DavelTel, Inc.
35.	ATN, Inc.	87.	Discount Network Services, Inc.
36.	ATX Telecommunications Services, Inc.	88.	Discount Utilities, LLC
37.	Avana Communications Corporation	89.	Discounted Long Distance, Inc.
38.	BellSouth Long Distance, Inc.	90.	DPI-Teleconnect, LLC
39.	BellSouth Public Communications, Inc.	91.	Eastern Telecommunications, Inc.
40.	Big Planet, Inc.	92.	Easton Telecommunications Services, Inc.
41.	Blackstone Communications Company	93.	Efficy Group, Inc.
42.	BLT Technologies, Inc.	94.	Encompass Communications, LLC
43.	Bluegrass Telecommunications, LLC	95.	Enhanced Communications Group, LLC
44.	Broadwing Communications Company	96.	Enhanced Communications Network, Inc.
45.	Broadwing Telecommunications, Inc.	97.	EqualNet Corporation
46.	Budget Call Long Distance, Inc.	98.	eriba Network, Inc.
47.	Budget Phone, Inc.	99.	Evercom Systems, Inc.
48.	Buehner-Fry, Inc. d/b/a Resort Operator Services	100.	Everest Broadband Networks of Tennessee, Inc.
49.	Business Discount Plan, Inc.	101.	eVulkan, Inc. d/b/a beMANY!
50.	Business Options, Inc.	102.	Excel Communications, Inc.
51.	Business Telecommunications, Inc.	103.	EZ Phone, Inc.
52.	Buyers United International, Inc.	104.	EZ Talk Communications, LLC

TENNESSEE LONG DISTANCE RESELLERS

	Company Name		Company Name
105.	ezTel Network Services, LLC	156.	Long Distance Billing
106.	FaciliCom International, LLC	157.	Long Distance of Michigan, Inc.
107.	Federal TransTel, Inc.	158.	Long Distance Services, Inc.
108.	First National Services Corp. (FNSC)	159.	Long Distance Wholesale Club
109.	FirstWorld Communications, Inc.	160.	Marathon Communications Corp.
110.	FON Digital Network, Inc.	161.	Matrix Telecommunications, Inc.
111.	Free Network	162.	Maxxis Communications, Inc.
112.	GE Capital Communication Services Corp.	163.	MCI WorldCom Communications, Inc.
113.	Georgia National Acceptance Corp.	164.	McLeod USA Telecommunications, Inc.
114.	Global Crossing North American Networks, Inc.	165.	Metrocall, Inc.
115.	Global Crossing Telecommunications, Inc.	166.	Millennium Telecommunications, LLC
116.	Global Tel Link	167.	MountaiNet Long Distance, Inc.
117.	Global Telephone Corporation	168.	Mtel Long Distance, Inc.
118.	Global Time, Inc.	169.	MVX.com Communications, Inc.
119.	Glyphics Communications, Inc.	170.	National Accounts, Inc.
120.	Gnet Telecommunications, Inc.	171.	Navigator Telecommunications, LLC
121.	Go Tel, Inc.	172.	Net One International, Inc.
122.	Group Long Distance, Inc.	173.	Net-tel Corporation
123.	GST Net	174.	Net2000 Communication Services, Inc.
124.	GTC Telecommunications	175.	NeTel, Inc.
125.	Gulf Long Distance, Inc.	176.	Network America, Inc.
126.	Hertz Technologies, Inc.	177.	Network Billing Systems, LLC
127.	Highland Communications Corporation	178.	Network Communications International
128.	HJN Telecommunications, Inc.	179.	Network Enhanced Technologies, Inc.
129.	I-Net Communications, Inc.	180.	Network International, LC
130.	IDT America, Corp.	181.	Network Operator Services, Inc.
131.	Inacom Communications, Inc.	182.	Network Plus, Inc.
132.	Incomnet Communications, Corp.	183.	Network Telephone Corporation
133.	INET Interactive Network System, Inc.	184.	NetworkIP, LLC
134.	Intelcom, Inc.	185.	New Century Telecommunications, Inc.
135.	Intellicall Operator Services, Inc.	186.	NexBand Communications, Inc.
136.	Inter-Tel NetSolutions, Inc.	187.	Nextar Communications, Inc.
137.	Intercontinental Communications Group, Inc.	188.	Norlight, Inc.
138.	International Exchange Communications, Inc.	189.	Norstan Network Services, Inc.
139.	International Telcom, Ltd.	190.	NOS Communications, Inc.
140.	ITC^DeltaCom Communications, Inc.	191.	NOSVA, Limited Partnership
141.	J D Services, Inc.	192.	NOW Communications, Inc.
142.	KDD America, Inc.	193.	NXLD Company
143.	Kentucky Data Link, Inc.	194.	NYNEX Long Distance Company
144.	LCI International Telecommunications, Corp.	195.	OLS, Inc.
145.	LD Exchange.com, Inc.	196.	OmniCall, Inc.
146.	LDD, Inc.	197.	Omniplex Communications Group, LLC
147.	LDM Systems, Inc.	198.	OnePoint Communications, Georgia, LLC
148.	Least Cost Routing, Inc.	199.	OneSource Communications, LLC
149.	Legacy Long Distance International, Inc.	200.	OneStar Long Distance, Inc.
150.	Legends Communications, Inc.	201.	Operator Service Co.
151.	LightNetworks, Inc.	202.	OPEX Communications, Inc.
152.	Lightyear Communications, Inc.	203.	OPTICOM
153.	Lightyear Telecommunications, LLC	204.	Ozark Telecommunications, Inc.
154.	Local Telcom Holdings, LLC	205.	PaeTec Communications, Inc.
155.	Long Distance America, Inc.	206.	Park 'N View, Inc.

TENNESSEE LONG DISTANCE RESELLERS

	Company Name		Company Name
207.	Pay Tel Communications, Inc.	255.	Telstar International, Inc.
208.	Phoenix Network, Inc.	256.	Teltrust Communications Services, Inc.
209.	Phones For All	257.	The Other Phone Company, Inc.
210.	Premiere Communications, Inc.	258.	Time Warner Telecommunications of the Mid-
211.	Primus Telecommunications, Inc.	259.	Tin Can Communications Company d/b/a The Cube
212.	Promise Vision Technology, Inc.	260.	TLX Communications, Inc.
213.	Promise-Net International, Ltd.	261.	TON Services, Inc.
214.	PT-1 Counsel, Inc.	262.	TotalTel, Inc.
215.	Pt-1 Long Distance, Inc.	263.	Touch 1 Communications, Inc.
216.	QCC, Inc.	264.	Touch 1 Long Distance, Inc.
217.	Quest Telecommunications, Inc.	265.	Trans National Communications International, Inc.
218.	Qwest Communications Corp.	266.	Transcommunications, Inc.
219.	RCN Long Distance Company	267.	TresCom U.S.A., Inc.
220.	RDST, Inc.	268.	TriVergent Communications, Inc.
221.	RRV Enterprises, Inc. d/b/a Consumer Access	269.	TRI-M Communications, Inc.
222.	RSL COM U.S.A., Inc.	270.	TTI National, Inc.
223.	Satellink Paging, LLC	271.	Twister Communications Network, Inc.
224.	SBR, Inc.	272.	U S WEST Interprise America, Inc.
225.	ServiSense.com, Inc.	273.	U S West Long Distance, Inc.
226.	Shared Communications Services, Inc.	274.	U.S. Long Distance, Inc.
227.	SkyBest Communications, Inc.	275.	U.S. Republic Communications, Inc.
228.	SNET America, Inc.	276.	UKI Communications, Inc.
229.	Southern Communication System	277.	Uni-Tel Communications Group, Inc.
230.	SouthernNet, Inc.	278.	United Communications HUB, Inc.
231.	SouthNet Telecomm Services, Inc.	279.	United Communications Systems, Inc.
232.	Southwestern Bell Communications Services,	280.	United States Advanced Network, Inc.
233.	Speer Virtual Media, Ltd.	281.	United States Telecommunications, Inc.
234.	St. Andrews Telecommunications, LLC	282.	Univance Telecommunications, Inc.
235.	Starlink Communications, LLC	283.	Universal Access, Inc.
236.	Startec Global Licensing Company	284.	US South Communications, Inc.
237.	Sterling Time Company	285.	USA Digital Communications, Inc.
238.	T-NETIX Telecommunications Services, Inc.	286.	USA Tele Corp.
239.	Talk.com Holding Corp. d/b/a Network Services	287.	UTC Long Distance, LLC
240.	TDS Long Distance Corp.	288.	Utility.com, Inc.
241.	Tele-SyS, Inc. d/b/a Access America	289.	VarTec Telecommunications, Inc.
242.	Telecare, Inc.	290.	Verizon Long Distance
243.	TeleCents Communications, Inc.	291.	Verizon Select Services, Inc.
244.	Telecommunications Resources, Inc.	292.	Viatel Services, Inc.
245.	Telecommunications Company of the Americas,	293.	VoCall Communications Corp.
246.	Telecommunications Cooperative Network, Inc.	294.	West Kentucky Networks, Inc.
247.	TeleConex, Inc.	295.	Williams Communications, Inc.
248.	Teleglobe Business Solutions, Inc.	296.	Working Assets Funding Service, Inc.
249.	Teleglobe USA, Inc.	297.	Xtracom, Inc.
250.	Telemanagement Services, Inc.	298.	Yorkville Communications, Inc.
251.	Telephone Company of Central Florida, Inc.	299.	Z-Tel Communications, Inc.
252.	Telescan, Inc.	300.	Z-TEL, Inc.
253.	TelOne Telecommunications, Inc.	301.	Zenex Long Distance, Inc.
254.	Telscape USA, Inc.		

DETAILED RESULTS OF TRA SURVEY ON SMALL AND MINORITY-OWNED BUSINESS PLANS

Below are the detailed results of the survey of small and minority. A short summary is provided following each question. This section will conclude with some of the major findings of the survey. The survey results reported in this section are based solely upon the responses of telecommunications service providers. No independent verification was conducted by the TRA on the responses to the survey.

- **Please identify the contract opportunities that exist with your company.**

Of the forty (40) companies responding that they had engaged in telecommunications business in Tennessee during 1999 through 2000, thirty-three (33) indicated that contract opportunities exist with their companies for small and minority-owned business contracts. Some of the categories of business opportunities mentioned are listed below.

Computer equipment/software	Janitorial services
Construction	Legal services
Data Processing	Office Supplies/equipment
Furniture	Graphics
Personnel services	Safety equipment
Security equipment	Telephone switching equipment
Video equipment	Lawn Care
Building maintenance	Training

- **Does your company maintain a list of small and minority-owned telecommunications businesses that are eligible for opportunities with your company? If so, please attach a copy of your list. How often is this list updated?**

Only fifteen (15) companies indicated that they maintain such a list of qualified small and minority-owned businesses. Consistent with our last report on this subject, some companies indicated that they are continuing to have difficulty in locating such a list. Some of the smaller incumbent companies indicated that they knew first-hand such businesses within their communities and were contacting them when contract jobs were available.

- **What methods does your company employ to identify small and minority-owned businesses?**

Sixteen (16) companies indicated that they had actively taken steps to identify such businesses. Several companies indicated that they had obtained a list of certified minority businesses from the Tennessee Minority Supplier Development Council. Several other companies stated that they were compiling their own list when qualified contractors solicited contracts from them. Still others cited contacting their local chamber of commerce and attending Trade Fairs to obtain such information. Many of the small incumbents indicated that they utilize the Small Business Administration's Procurement Automated System (PASS) for a list of qualified subcontractors.

Several of the newly authorized competing providers indicated that they had not taken steps to identify such businesses due to the embryonic stage of their business in Tennessee.

- **What methods does your company employ to notify small and minority-owned businesses of business opportunities within your company?**

Sixteen (16) companies indicated that they have procedures in place to notify these businesses through a national database of more than 15,000 of American's top minority-owned firms called the Minority Business Information System maintained by the National Minority Supplier Development Council.

Several small incumbent local exchange carriers indicated that they utilize the Rural Utility Service ("RUS") list of qualified contractors. They went on to say that the loans they receive from the federal government require that they utilize contractors on this list. Small and minority-owned businesses interested in pursuing employment opportunities with these small telephone companies should take the necessary steps to be listed on the RUS list of qualified contractors.

- **What is your company's dollar amount of contracts to small and minority-owned businesses for 1999 and 2000?**

Thirteen companies responded that they spend approximately $11.28 billion on small and minority-owned business contracts during 1999 through 2000. Most of the activity was witnessed from incumbent telecommunications service providers along with AT&T, MCI and

Sprint Long Distance. Only two (2) competing telecommunications service providers (Time Warner and Electric Power Board of Chattanooga) indicated that they had entered into contracts with small and minority-owned businesses during 1999 through 2000 in the amount of $1.954 million.

Many of the estimated expenditures were nationwide figures. The larger companies stated that their tracking systems do not allow for the generation of Tennessee specific estimates. BellSouth and AT&T alone accounted for $11 billion.

- **Please describe any programs, which your company has provided technical assistance to small and minority-owned businesses during 1999–2000. How many times were these programs utilized by small and minority-owned business during 1999–2000?**

T.C.A. § 65-5-212 requires telecommunications service providers to file with the TRA aspects of their Plans that are designed to provide technical assistance to small and minority-owned business in the state. There is no requirement that such a program exists within the companies' Plan but merely to identify the program if it exists.

Ten (10) telecommunications service providers indicated that they had programs to provide technical assistance to such businesses. Many of the companies stated that their assistance was limited to helping potential subcontractors when submitting bid proposals. MCI WorldCom stated that it was participating in the Department of Defense's Mentor-Protégé Program. Under this Program, MCI WorldCom serves as a mentor to a female Hispanic-owned company located in Denver, CO.

TENNESSEE CELLULAR PROVIDERS		TENNESSEE PCS PROVIDERS	
	Company Name		**Company Name**
1.	ACC of Tennessee, LLC	1.	BellSouth Personal Communications, Inc.
2.	Advantage Cellular Systems, Inc.	2.	Powertel Memphis, Inc.
3.	BellSouth Mobility, Inc.	3.	Sprint Spectrum, LP d/b/a Sprint PCS
4.	Chase Telecommunications, Inc.		
5.	Chattanooga MSA Limited Partnership		
6.	Chattanooga Cellular Telephone Company		
7.	Knoxville Cellular Telephone Company		
8.	Memphis C G S A, Inc.		
9.	Memphis Cellular Telephone Company		
10.	GTE Mobilnet of Tennessee, Inc.		
11.	GTE Mobilnet of Clarksville, Inc.		
12.	GTE Mobilnet of Nashville, Inc.		
13.	GTE South, Inc.		
14.	M-T Celluar, Inc.		
15.	Memphis SMSA Limited Partnership		
16.	Nextel South Corp.		
17.	Northeast Mississippi Cellular, Inc.		
18.	SprintCom, Inc.		
19.	Telecorp Communications, Inc.		
20.	Telespectrum of Virginia, Inc.		
21.	Tennessee RSA Limited Partnership		
22.	Tennessee RSA No. 3 LP		
23.	Tennessee RSA #4, Sub 2, Inc.		
24.	Tennessee RSA 8 Limited Partnership		
25.	360 Degree Comm. Co. of Tennessee No. 2		
26.	Triton PCS Operating Co., LLC		
27.	Tritel Communications, Inc.		
28.	U. S. Cellular Tel Co of Greater Knoxville		
29.	Westel-Milwaukee Company, Inc.		
30.	Yorkville Communications, Inc.		

TENNESSEE CABLE TELEVISION COMPANIES SERVICE AREAS

Adelphia Communications
Baileyton
Bulls Gap
Friendsville
Greenback
Greeneville
Loudon
Louisville
Mosheim
Tusculum

Benton County Cablevision
Big Sandy
New Johnsonville

Bledsoe Telephone Co-Op
Dunlap
Pikeville

Cable One
Dyersburg
Friendship

Cablevision Communications
Hornbeak
Mountain City
Ridgely
Samburg
Tiptonville

Celina Cable Communications
Celina

Charter Communications
Adamsville
Alamo
Alcoa
Alexandria
Algood
Altamont
Ashland City
Atwood
Baneberry
Baxter
Bean Station
Beersheba Springs
Bell Buckle
Bells
Bethel Springs
Bluff City
Bolivar
Bradford
Brighton
Bristol
Brownsville
Bruceton
Burlison
Calhoun
Camden
Centertown
Centerville
Charleston
Church Hill
Clarksburg
Clarksville
Cleveland
Clifton
Coalmont
Collinwood
Columbia
Cookeville
Coopertown
Covington
Crossville
Crump
Dandridge
Dayton
Decatur
Decaturville
Dowelltown
Doyle
Dyer
Elizabethton
Farragut
Fayetteville
Gadsden
Garland
Gates
Gatlinburg
Gibson
Gilt Edge
Gleason
Gordonsville
Graysville
Greenbrier
Greenfield
Gruetli-Laager
Halls
Henderson
Henning
Hohenwald
Hollow Rock
Huntingdon
Iron City
Jackson
Jasper
Jefferson City
Jellico
Johnson City
Kenton
Kimball
Kingsport
Lawrenceburg
Lebanon
Lenoir City
Lewisburg
Lexington
Liberty
Loretto
Loudon
Madisonville
Manchester
Martin
Maryville
Maury City
McEwen
McKenzie
McLemoresville
McMinnville
Milan
Milledgeville
Monteagle
Monterey
Morrison
Morristown
Mount Carmel
Mount Pleasant
New Hope
Mew Market
Newbern
Newport
Obion
Orme
Palmer
Paris
Parsons
Philadelphia
Pigeon Forge
Pleasant View
Powells Crosroads
Pulaski
Ripley
Rives
Rogersville
Rutherford
Rutledge
Saltillo
Savannah
Selmer
Sevierville
Sharon
Shelbyville
Sneedville
South Fulton
South Pittsburg
Sparta
Spencer
Spring Hill
St. Joseph
Sweetwater
Thompson's Station
Tracy City
Trezevant
Trimble
Troy
Tullahoma
Union City
Viola

TENNESSEE CABLE TELEVISION COMPANIES SERVICE AREAS

Charter Communications Cont.)
Wartrace
Watauga
Watertown
Waynesboro
White Pine
Whitwell
Woodland Mills

Comcast Communications
Athens
Benton
Blaine
Caryville
Chattanooga
Collegedale
Copperhill
Ducktown
East Ridge
Englewood
Erwin
Etowah
Gatlinburg
Guys
Harriman
Jacksboro
Johnson City
Jonesborough
Kingston
Knoxville
LaFollette
Lake City
Lakesite
Livingston
Lookout Mountain
Lutrell
Maynardville
Michie
Midtown
Norris
Parrottsville
Pigeon Forge
Pittman Center
Red Bank
Ridgeside
Rockford
Rockwood
Sevierville
Signal Mountain
Soddy-Daisy
Townsend
Unicoi
Walden

Communicomm Services
Harrogate
New Tazewell
Tazewell

Dresden Cable, Inc.
Dresden

Galaxy Cablevision
Puryear

Gainesboro CATV
Gainesboro

Infostructure Cable & Internet
Humboldt
Medina

Intermedia/AT&T & BIS
Adams
Ashland City
Belle Meade
Berry Hill
Brentwood
Burns
Carthage
Cedar Hill
Charlotte
Cowan
Decherd
Dickson
Estill Springs
Fairview
Forest Hills
Fort Campbell
Franklin
Gallatin
Goodlettsville
Greenbrier
Hartsville
Hendersonville
Kingston Springs
LaFayette
Lakewood
Lavergne
Lynchburg
Mount Juliet
Murfreesboro
Nashville
Nolensville
Oak Hill
Pegram
Portland
Red Boiling Springs
Ridgetop
Slayden
Smithville
Smyrna
South Carthage
Springfield
Vanleer
Waverly
Westmoreland

Intermedia/AT&T & BIS (Cont.)
White Bluff
Winchester
Woodbury

Mediacom
Ardmore
Dover
Elkton
Huntland

Mid-South Cable TV
Crab Orchard
Crossville
Nolensville
Pleasant Hill

Millington CATV
Atoka
Millington
Munford

People's CATV
Erin
Henry
Tennessee Ridge

Petersburg CATV
Petersburg

Pickwick Cablevision
Pickwick Dam

Rapid Communications
Allardt
Byrdstown
Helenwood
Huntsville
Jamestown
Niota
Oakdale
Oneida
Sunbright
Tellico Plains
Vonore
Wartburg
Winfield

Spring City Cable TV
Spring City

STC Cable Corp.
Chapel Hill
Cornersville
Eagleville
Ethridge
Linden
Lobelville
Lynnville
Minor Hill
Scotts Hill
Surgoinsville

Tele-Media Corporation
Cross-Plains
Cumberland Gap
Millersville
Michellville
Orlinda
White House

Tennessee Cablevision
Clinton
Oak Ridge
Oliver Springs

The Cablevision Co.
Fairfield Glade

Time Warner
Arlington
Bartlett
Braden
Collierville
Gallaway
Germantown
Grand Junction
Hickory Withe
LaGrange
Lakeland
Mason
Memphis
Middleton
Moscow
Oakland
Piperton
Rossville
Saulsbury
Somerville
Stanton
Whiteville
Williston

Trenton TV Cable
Trenton

Source: Tennessee Cable Telecommunications Association

TENNESSEE LOCAL, REGIONAL AND NATIONAL INTERNET ACCESS PROVIDERS

1st Connect
1st Internet Resources Corporation
3rd Wave Technologies

A+Net
Access, LLC
Access America Internet
Access-Us
AceLink Communications
Advantage Web
Aeneas Internet Services
Alta Vista Free Access
America On Line
Ashkins Internet Services

Ben Lomand Telephone
BlitzNet Online Communications
Blue Sky Internet
BMR Communications
Bumpn.com

Campbell County Online
Charter Communications
Chattanooga Data Connection
Chattanooga Online
Cisco Nation Wireless
Clarksville Internet Services
Clarksville On-Line
Compu-Net Enterpises
CompuServe Internet Gateway
Computer Café'
Connect 200
Covenant Promotions
Cybercast Internet Services
Cyberwave Communications

Datatek International
Dickson.Net
DogHouse Online
DTC Communications

EarthLink
East Tennessee Network
ECS Internet Services
EdgeNet Media
E-Guys
Electronic Communications Systems
Erol's Internet
Esper Systems
Excite@Home

First Internet Communications
First Internet Resources
Freei.Net
Free-PC
FreePPP
Freewwweb USA
Frontline.Net

Go America Wireless
GoldSword Systems

Heart of Tennessee Net
Henderson County Online
Higher Technology Services

ICX Internet Communications
Images ON_the net
Institute for Global Communications
Internet Communications Group
Internet Design Group
Internet Services
Internet Services West Tennessee
Internet Complete
Interstate 2000
ISDN-Net
iXL

Knightwave Technologies
Knox County Freenet
KORRnet

Lamar Network Service
LogOn Computer Services

Major Internet
Martek Computer
MCI WorldCom
Metricom Wireless
Mid-South Connections
Mid-South Online
Midtenn.net
MindSpring Enterprises
MM2K
MultiPro Network

N2 The Net
NetLinx Technologies
Nashville.com
Net Aware
Net Services
NetEase Internet Access
Net-Express
Netgenie
NetServ Internet Services
NetStar Communications
NetZero
Newsite Internet Services

Oltronics Internet Services
Online Suites
OurLink Communications

Planet Connect
Planet Systems
Point of View Internet Services
Preferred Internet
Prodigy

Quick Surfer Internet Access

Rnet Internet Services
Road Runner

SAVVIS Communications
ServInt Internet Services
Skyquest
Snappy Link Internet Services
Softek
SonicPath
Southland Technologies
Spire Internet Company
Synapse

T-Net Internet Services
TCP Internet Services
Telalink
Tennessee Networking Systems
Tennessee Professional Web Services
TNWeb L.L.C.
TPISP Network
Trends Internet
Twin Lakes Telephone

Ultracom Internet
Unidial Communications Inc.
United States Internet
USOL

Valley Internet
VEI Internet
Verio
Virtual Interactive Center
Volunteer Network Services
Volunteer State Internet
Voyager Online

Washington County OnLine
WebbSource
WebNet
WingNET Internet Services
Worldkey.net
WorldSpice Technologies
World Wide Gap

Relaying Calls for the Deaf and Hard of Hearing: Telecommunications Relay Service

Telecommunications relay services is critical for members of the deaf and hard of hearing community to participate in the information age. In Tennessee, as in all states, deaf and hard of hearing persons gain access through the Telecommunications Relay Service ("TRS"). Availability of TRS is mandated by federal statute. TRS in Tennessee is provided by contract by AT&T, and is managed by the TRA. The next contract is due to be awarded in September 2001.

Relay services are necessary to assist deaf persons in using the telephone network. These devices, telecommunications devices for the deaf, are typically text telephones ("TTY"). With a TTY a deaf person calls the relay to place their call. A communications assistant then connects the call, reads aloud what is typed on the TTY to hearing recipients of this type of call, and types to the TTY user what is spoken on the other end of the call. During the contract process in 1998, the TRA required the addition of a technical call feature called Turbo Code. This feature allows for near real time communication for TTY users and also allows the typed conversation to be interrupted, as an "excuse me" would do with hearing person's telephone conversations. This feature is highly popular and desirable by the TTY using community.

The TRA makes every effort to ensure areas for improvements in services are always being examined, and the FCC has recently enacted further TRS availability and national service standards mandates. The two most recent FCC initiatives are described below.

1. In order to establish national service standards, the FCC released *00-56, Report and Order and Further Notice of Proposed Rulemaking, Telecommunications Relay Services and Speech-to-Speech for Individuals with Hearing and Speech Disabilities, March 6, 2000.* These rules are intended to increase the availability and usefulness of the telecommunications system for Americans with hearing and speech disabilities. This order puts further requirements on the TRS provider as follows:

- The requirement that common carriers provide Speech-to-Speech relay services by March 1, 2001. This service is designed to assist individuals with speech impediments to better communicate over the telephone.

- A requirement that common carriers provide interstate Spanish relay services by March 1, 2001.

- Requires that 85% all TRS calls be answered within 10 seconds and be placed in queue or on hold.

- Imposes a minimum typing speed of 60 wpm for Relay Communications Assistants ("CA").

- Requires CAs to remain with a call for a minimum of 10 minutes.

- Provides authorized capabilities and requires notification and summarization of interactive messaging, allowing access to these often used systems.

- Requires the TRS provider to offer pay-per-call services.

2. To facilitate easier access to the TRS, the FCC mandated abbreviated dial in access on a national basis, *00-257,Second Report And Order, The Use of N11 and Other Abbreviated Dialing Arrangements, August 9, 2000,* This order provides for access to TRS by dialing 711. This abbreviated dial in access is to be in effect by October 1, 2001. The TRA has ordered 711 dialing be implemented and access to be in effect by March 31, 2001, ahead of the FCC schedule.

While Tennessee's TRS presently meets most of the new requirements, all TRS requirements will be included in the TRA's new TRS contract, which is due to begin in September 2001.

The following charts illustrate the annual relay call usage and turbo code call usage:

Annual Relay Call Usage

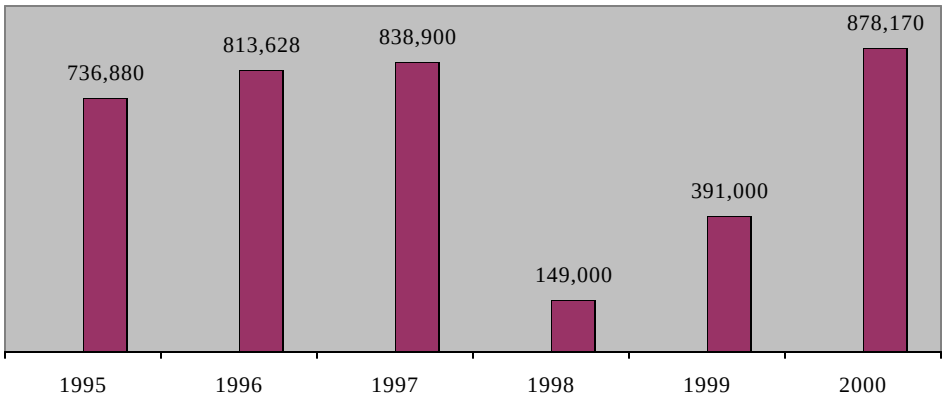


Table 34

Turbo Code Call Usage

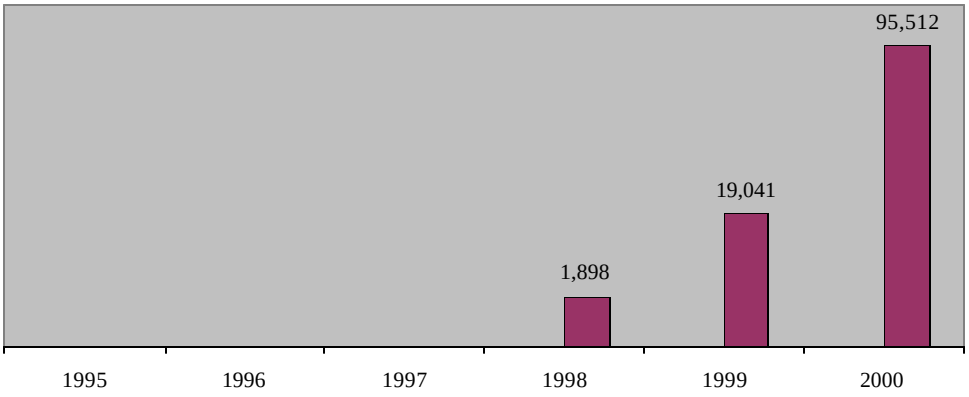


Table 35

A copy of this report is available on the Tennessee Regulatory Authority's web site at www.state.tn.us/tra.